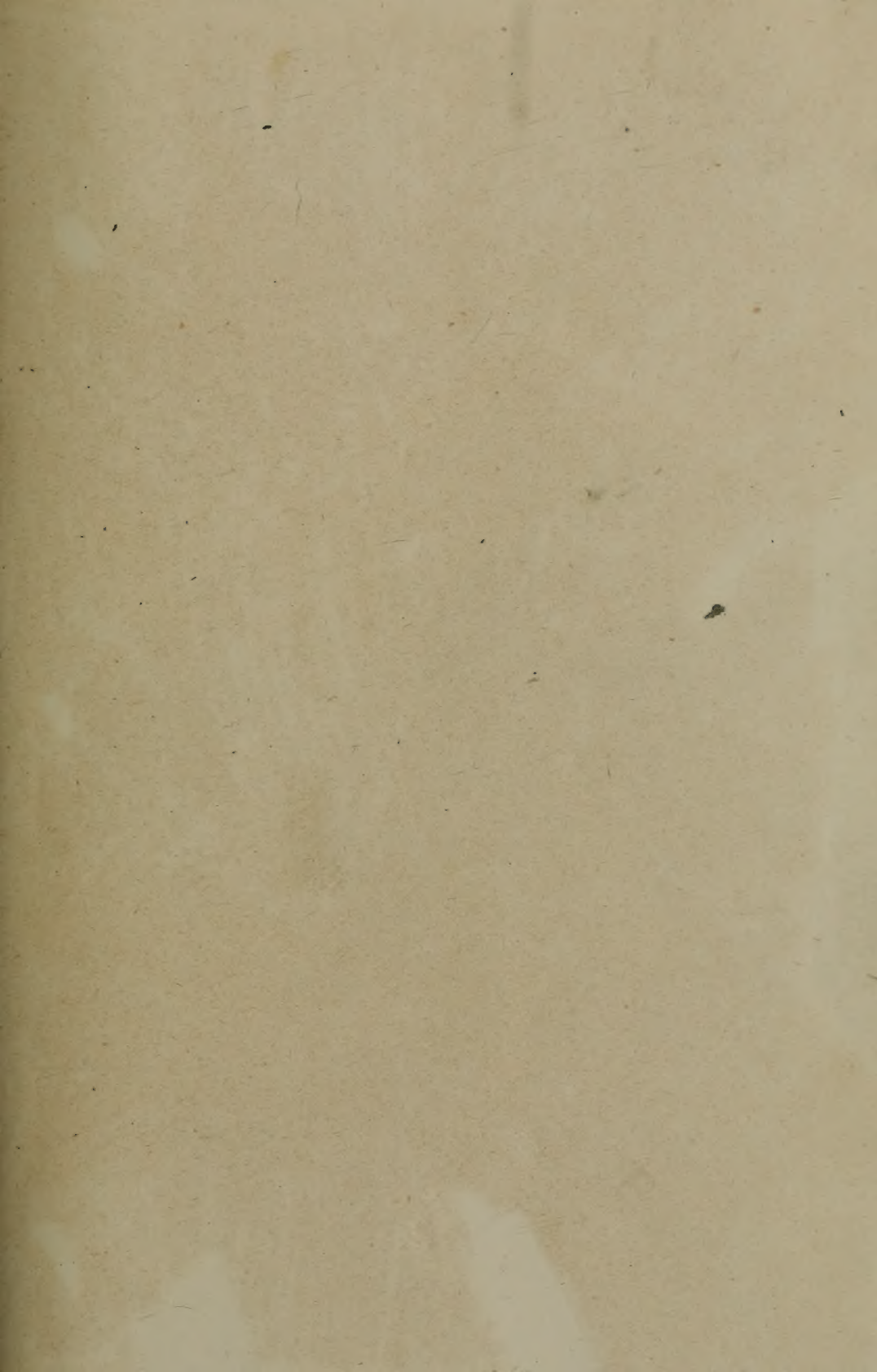


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“Gem, flower, and fish, the bird, the brute,
Of every kind occult or known,
Each exquisitely formed to suit
Its humble lot, and that alone,
Through ocean, earth and air fulfil,
Unconsciously their Maker's will.”

“Has Nature in her calm majestic march
Faltered with age at last? does the bright sun
Grow dim in heaven? or in the far blue arch,
Sparkle the crowd of stars when day is done
Less brightly? when the dew-lipped Spring comes on,
Breathes she with airs less soft, or scents the sky
With flowers less fair than when her reign began?
Does prodigal Autumn to our age deny
The plenty that once swelled beneath his sober eye?”

“Look on this beautiful world, and read the truth
In her fair page: see every season brings
New change to her of everlasting youth;
Still the green soil with joyous living things
Swarms; the wide air is full of joyous wings;
And myriads still are happy in the sleep
Of Ocean's azure gulfs, and where he flings
The restless surge. Eternal love doth keep
In his complacent arms the earth, the air, the deep.”

BRYANT.

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THE ZOOLOGIST

FOR

1872.

Notices of New Books.

A Synonymic List of Diurnal Lepidoptera. By W. F. KIRBY,
Author of 'A Manual of European Butterflies,' &c. London:
John Van Voorst, 1, Paternoster Row. Demy 8vo, 690 pp.,
price 2ls.

THIS work contains the names and synonyms of seven thousand six hundred and ninety-five species of butterflies—a fact which needs only to be stated in order to make the entomological reader aware of the labour incurred in its compilation.

In reviewing a work of this kind four problems have to be solved:—1. Is the arrangement good? 2. Are the names well selected? 3. Is the synonymy accurate? 4. Is the work complete?—that is to say, Has the author confined his investigations to certain works of standard excellence and acknowledged authority, or has he searched our Natural-History periodicals for *all* the descriptions of new species published subsequently to those standard works, thus bringing up the bibliography of butterflies to the date of publication? I will express my opinion on all these points. 1. I think Mr. Kirby has wisely adopted the natural or larval arrangement of butterflies, instead of the artificial arrangement by size and colour hitherto universal in this country: it is no reflection on reviewer or reviewed that we differ in some of the details. 2. I think Mr. Kirby's selection of names, both generic and specific, singularly unhappy;

and the rules which he has laid down for his own guidance radically bad. 3. As to the accuracy of the synonymy, I know that it is correct in some genera with which I am more particularly acquainted, and I see little reason to doubt its general accuracy. 4. The work appears scarcely complete.

First, then, as to system—a subject in which I have always taken the deepest interest. It is rather amusing to find that the author should have thought it necessary to make anything like an apology for the systematic arrangement of this crowd of objects, but he certainly seems to do so in the following paragraph:—"Although full materials for a natural arrangement of all the species could not be obtained, it was thought better to attempt some kind of arrangement than to place the species alphabetically." In this sentiment I fully concur, and I think Mr. Kirby somewhat needlessly distrusts his own unquestionable knowledge when he expresses any hesitation on the subject. He not only gives us "some kind of arrangement," but an arrangement displaying deep study both of Nature and of books; an arrangement which some may fear to adopt because disclosing unlooked-for combinations, and because travelling out of the accustomed groove, but an arrangement which everyone will be inclined to study with attention and respect.

Three ideas of arrangement prevail among those who have assiduously studied our pedunculate Lepidoptera.

i. That the characters of the imago, more particularly size and colour, are available for systematic classification: such seems to have been the leading idea with the illustrious father of Natural History, John Ray, and he has been obsequiously followed by our own Haworth and many others. It is obvious that this arrangement is *par excellence* the arrangement of the museum, and results from a knowledge of the preserved specimen as acquired after the individual is prepared for the cabinet, and a careful and loving study of its peculiarities.

ii. That the preparatory states of larva and pupa offer more natural, and therefore more reliable, characters for classification: this seems to have been the leading idea with Denis and Schiffermüller, and to have been adopted very cordially by Horsfield and Swainson; it is also the plan which Herrich-Schäffer has followed, although not avowedly, in the Introduction to his beautiful and priceless 'Schmetterlinge von Europa,' and by myself in the 'Entomologist' and the 'Illustrated Natural History of British Butterflies.'

This idea is obviously that of the field naturalist rather than the closet naturalist, the out-of-doors student rather than the book-worm.

iii. The eclectic idea: the idea that the study of the imago and the study of the larva should be intermixed and their characters combined into one harmonious whole: this idea was that of Latreille and Boisduval. This system has been explained and adopted by Mr. Westwood, in his 'Modern Classification,' and adopted in a concise but very explicit manner by Mr. Stainton, in his 'Manual of British Butterflies and Moths,' and has been reduced to practice by Dr. Staudinger, in his 'Catalog der Lepidopteren,' a most laborious compilation, now in the hands of every European Lepidopterist. This system has its obvious advantages, for whereas the first regards the butterfly as a lay figure set up and postured, and the second regards it before it has attained half its attributes, the third treats it as a progressive history gradually unfolding itself, and to make that history complete you have to study it continuously, not only when wearing the imperial purple but when struggling and toiling for a mere existence. But as entomologists are not all statesmen, and therefore some may fail to appreciate this illustration, I will borrow another from commercial usage: those tradesmen who would prove beyond question the truthfulness of their books and the reality of their position, keep their books by a system of double entry; and the accounts are thus made to verify themselves, or at least furnish ready means of detecting error: now there can be no question that structure presents us with a series of natural differences which may be useful to us in forming a classification; for instance, some butterflies are invariably provided with six legs, all of which are formed alike, and all perfectly adapted for walking: others have but four such legs, and in lieu of the anterior pair of perfect legs have a pair of imperfect legs quite incapable of performing the usual function of legs, progressive motion; hence these two sections of butterflies have been denominated "hexapod," or six-legged, and "tetrapod," or four-legged: this offers us one mode of keeping our accounts with the butterfly world. It is equally a matter of certainty that a constant difference obtains in the economy of the living insects, some of them turning to a chrysalis supported by a belt passing round the waist or middle of the body, and so remaining fixed with the head upwards, and others attaching themselves by the tail and hanging head downwards. Here we have characters for two systems of

classification: at first sight, these seem likely to induce different results, but a more intimate acquaintance with the subject teaches us that a chrysalis fastened in its position by a belt passing round the body and head upwards produces a butterfly with six legs, while a chrysalis suspended by the tail head-downwards produces a butterfly which has but four legs: thus we have a system of double entry which ever verifies itself.

There are, however, obvious similarities in the perfect insects, which cannot be accepted by the erudite as indicating any innate approximation of character, but which are very likely to mislead the collector of exotics, whether he work *propria manu* or simply by purchase. Nothing could be less logical than to place side by side, or in the linear series which our cabinets render indispensable, such insects as *Parnassius Stubbendorffii* and *Aporia Cratægi*, one in its metamorphosis essentially a moth, the other as essentially a butterfly, and yet they are so alike that they would be supposed by a tyro to be of the same species. We shall find later on that even the immortal Ray was repeatedly misled by such superficial similarities: he places his "half-mourner" (*Melanagria Galathea*) side by side with his "greenish marbled half-mourner" (*Pieris Daplidice*), the one a tetrapod, the other a hexapod, a similar distribution of colour leading him to this step: the female of *Papilio Merope* of Cramer, a hexapod, which is described as *Papilio Hippocoon* by Fabricius, is all but identical in appearance with *Papilio Niavius*, yet here again one is a hexapod, the other a tetrapod; *Papilio Niavius* is now an *Amauris*, and Godart actually describes this female as *Danais Rechila*. Numberless instances of this kind occur throughout the butterflies. One of the most learned and most distinguished entomologists, of any age, William Sharpe MacLeay, endeavoured to methodise these similarities and to distinguish them from real relationships by calling them "relations of analogy," while the structural or real relationship he denominated "relations of affinity." But Mr. MacLeay has not succeeded in a differentiation of these relations; for while no two naturalists have agreed as to the meaning of "relations of analogy," all have appeared to regard, and I think with much propriety, "Relationship" and "Affinity" to be synonymous terms. The Rev. William Kirby, Mr. Swainson and Mr. Vigers laboured most assiduously to elucidate the subject, but found no audience, and Mr. Westwood, following these illustrious writers, spread such an impenetrable fog over the entire

question as completely concealed it from our sight, and from the day that profound entomologist published, in the Transactions of the Linnean Society, his "Illustrations of the Relationships existing amongst Natural Objects, and usually termed Affinity and Analogy," the subject has fallen into oblivion. The phenomena, however, are not so easily disposed of; and while the "Elucidations," "Explanations" and "Illustrations" are utterly forgotten, the phenomena elucidated, explained and illustrated, continuously crop up, excite our interest, and often lead to some of our most agreeable discussions. Of late years, more especially, these similarities have been diligently observed, carefully described and abundantly canvassed; nevertheless, as aids to classification, they are at present utterly ignored.

The butterflies of Science dwell lovingly, aye, doat, on them, and coin all manner of endearing epithets by which to distinguish them: "mimetic," "representative," "protective," and so forth: they write and talk—I cannot say logically or consecutively, but profusely and brilliantly—on this fashionable theme, and thus achieve reputations which the day-labourer, the "species man," never attains: these butterflies of Science, like the butterflies of Nature, flutter all round the fountain of knowledge, toy and gambol with one another among the flowers on the margin, just sip at each honied chalice, and then off and away to somewhere else and to something else: they tarry not to drink. Perhaps they are right. I regard it as impossible to render these similarities available for purposes of classification until we have studied them in a more methodical, more earnest, and, if I may use the expression, more sincere manner, not for the sake of display, but, in the first place, mainly for self-instruction, and ultimately for the instruction of others.

The value of these similarities may be very small indeed, yet may, on the other hand, be very great indeed, but we cannot draw just and useful conclusions until we have carried out the subject to its full extent: we say the varying hare assumes its white coat in winter that it may thus escape the notice of the foxes; but we pause not to ask why the foxes assume the white coat at the same time. Is it to escape the notice of the hares? Butterflies not only resemble butterflies, but they often so nearly resemble moths, or flowers, or leaves, or sticks, or even stones, that it requires the educated eye of the naturalist to detect, and the practiced art of

the scholar to define the difference. But all these similarities are not similar similarities; those I have cited by name are instances of homœochroism, or similarities of colour; there are others that may be called homœomorphic, or instances of similarity in shape; and some may be merely homœophanic or instances of general resemblance which fade instantly before an attentive scrutiny. These things are trying to a systematist, and it is gratifying to observe how boldly Mr. Kirby has grappled with them, and how successfully he has vanquished them. I do not detect a single instance in which he has mistaken these similarities for those of a higher grade.

But I must adduce some of the leading methods of arrangement, and must lay them before the readers of the 'Zoologist,' although of late years they have been somewhat unaccustomed to entomological disquisitions; and first John Ray's, not that he is the earliest; he has a long line of predecessors, but none of them sufficiently methodical.

RAY'S ARRANGEMENT OF BUTTERFLIES, 1710.

"Papiliones diurnæ quarum nota certa et characteristicæ est Antennas habere clavatas."

We here have the two accepted titles of these insects set forth with unmistakable perspicuity: they are "*day* butterflies," for Ray, like our German and French entomologists, calls all Lepidoptera "butterflies," and their certain and characteristic distinction is having clavate antennæ; hence our modern term "*Rhopalocera*." He next proceeds to divide these "*Diurni*" or "*Rhopalocera*" into two groups, as follows:—

"Hæ vel sunt clavis brevioribus, alis inter sedendum erectis, vel longioribus, alis inter sedendum pendulis."

The author then proceeds to subdivide the first of these groups:—

"Papiliones diurnæ clavis brevioribus, alis erectis."

"Has ob clariorem et magis distinctam cognitionem ab alarum coloribus dividemus in eas."

"I. Quarum alæ colore sunt flavescente, aut flavescente et nigro variæ": includes, in the following order, *Machaon*, *Podalirius*, *Rhamni* and *Edusa*.

"II. Quarum alæ albæ sunt aut albo et nigro croceove variæ": includes

Brassicæ, Rapæ, Napi, Cratægi, Cardamines, Sinapis, Galathea and Daplidice.

“III. Quarum alæ de rufo aut fulvo maxime participant nigro, albo, luteo, cæruleove colore variæ”: includes *Urticæ*, *Polychloros*, *C-album*, *Paphia*, *Adippe*, *Lathonia*, *Selene*, *Athalia*, *Cinxia*, *Artemis*, *Lucina*, *Cardui*, *Io*, *Megæra*, *Janira*, *Tithonus*, *Pamphilus*, *Phlæas* and *Linea*.

“IV. Quarum alæ pullæ aut nigricantes ocellis aut maculis flavicantibus, e flavo albicantibus aut in aversa parte rufis variæ, quibus addimus eas quæ alis sunt cæruleis ocellis pictis:” includes *Atalanta*, *Iris*, *Sybilla*, *Egeria*, *Semele*, *Hyperanthus*, *Quercus*, *Betulæ*, *Icarus*, *Corydon*, *Argiolus*, *Acis*, *Malvæ* and *Rubi*.

It will be observed that colour affords the only character in this subdivision: and I should also state that Ray did not name the species; he only described them: there are no names in the original. Between fifty and sixty years elapsed after the publication of Ray's posthumous work before those great leaders in our Science, Linneus and Fabricius, gave to the world their views on the arrangement of butterflies: in both their systems considerable allusion is made to the *shape* of wings, and there is some amplification of the use of *colour*; size is also mentioned by Linneus in the instance of onisciforms, *Plebei rurales*, which are described as “small,” and the larva is noticed as being “often contracted.” Fabricius divides the butterflies into two genera, *Papilio* and *Hesperia*, which latter is equivalent to the *Plebei* of Linneus, including the onisciforms and the *Hesperias* of modern arrangements: the exact views of Linneus will of necessity appear as adopted by Haworth, and therefore need not be cited here. But anterior to Haworth came the system of Denis and Schiffermuller, in which the prior states of larva and pupa are distinctly admitted as a basis of classification: these I have incorporated with my own views further on. This, which was the earliest attempt at a mixed system, dates 1776, therefore was nearly synchronous with the later editions of Linneus, and anterior to most of the labours of Fabricius: there was not, therefore, a chance for the proposed changes to find any distinct recognition by either of these distinguished authors. We cannot say the same of Haworth, who was acquainted with Denis and Schiffermuller, who cites their works, and who enumerates them as among the “*Auctores citati*,” yet prefers ignoring their teachings altogether, and reverts to the characters of magnitude, colour and

shape of the imago as laid down by Ray, Linneus and Fabricius. I give his arrangement as it stands.

HAWORTH'S ARRANGEMENT, 1803.

- "* EQUITES ACHIVI (*Swallow-tails*). *Alis anticis ab angulo postico ad apicem longioribus quam ad basin; posticis ocello ad angulum anitruque.*" This division includes Machaon and Podalirius.
- "** PARNASSII (*Black-veins*). *Alis rotundatis denudatis:*" includes Cratægi only.
- "*** DANAI CANDIDI. *Alis integerrimis albis flavis fulvisve.*"
- "† ALBÆ (*Whites*). *Alis anticis postice rotundatis albis:*" includes Brassicæ, Rapæ, Napi, Sinapis, Daphidice and Cardamines.
- "†† FLAVÆ (*Clouded Yellows*). *Alis anticis postice oblique truncatis: posticis subtus annulo ferrugineo. Antennis abbreviatis ferrugineis:*" includes Edusa (*Helice*, *Europome*), and Hyale.
- "††† SULPHURÆ (*Brimstones*). *Alis omnibus angulatis subtus annulo ferrugineo. Antennis abbreviatis:*" includes Rhamni only.
- "**** DANAI FESTIVI (*Ringlets*). *Alis integerrimis, et in speciebus Britannicis ocellatis:*" includes Hyperanthus, Davus (*Polydama*, *Typhon*), Pamphilus.
- "***** NYMPHÆALES GEMMATI (*The ocellated*). *Alis præcipue posticis dentatis et ocellatis:*" includes Io, Iris, Cardui, Semele, Galathea, Megæra, Egeria, Jurtina = Janira, Pilosellæ = Tithonus.
- "***** NYMPHÆALES PHALERATI (*Inocellated*). *Alis præcipue posticis dentatis inocellatis, subinde angulato-laciniatis.*"
- "† LACINIATÆ (*Scalloped*). *Alis angulato-laciniatis, posticis subtus tristioribus. Antennis medioeribus:*" includes Calbum, Urticæ, Polychloros, Antiopa.
- "†† DENTATÆ (*Dentated*). *Alis dentatis subtus minus tristibus quam in ultimis. Antennis medioeribus:*" includes Atalanta and Camilla = Sibylla.
- "††† FRITILLARIÆ (*Fritillaries*). *Alis omnibus supra fulvis nigro plus minusve subtessellatis, posticis subtus argenteo vel albo vel albido elegante notatis. Clava antennarum urniformi magna.*"
- "+ ARGENTÆ (*Silver-spotted*). *Alis posticis subtus maculis argenteis:*" includes Paphia, Aglaia, Charlotta, Adippe, Lathonia, Euphrosyne, Selene.
- "++ ALBICANTES (*Buff-spotted*). *Alis posticis subtus maculis albis albidis vel subflavis:*" includes Dictynna = Athalia, Cimixia, Artemis and Lucina.
- "***** PLEBEII RURALES. *Statura in hoc genere parva. Alis anticis integris maculis opacis.*"

- “† CAUDATÆ (*Hair-streaks*). *Alis posticis emarginato-caudatis omnibus subtus striga pallida*.” includes *Betulæ*, *W-album*, *Quercus* and *Rubi*.
- “‡ CUPRÆE (*Coppers*). *Alis posticis ad angulum ani plus minusve emarginatis, omnibus supra igneo-cupreis, subtus punctis numerosis subocellaribus*”: includes *Dispar*, *Virgauriæ*, *Chryseis*, and *Phlæas*.
- “‡‡ CÆRULÆ (*Blue or Arguses*). *Alis integerrimis rotundatis, masculinis cæruleis (exceptis Ida et Artaxerxæ) femineis fuscis seu fusco-cæruleis, subtus subocellaribus ut in præcedentibus*.”
- “+ Multipunctatæ (*Many-spotted*). *Alis anticis subtus strigis plurimis punctorum*”: includes *Arion*, *Corydon*, *Adonis*, *Icarus*, *Hyacinthus*, *Argus* = *Ægon*, *Idas* = *Medon*, and *Artaxerxes*.
- “++ Paucipunctatæ (*Small-spotted*). *Alis anticis subtus striga unica punctorum*”: includes *Argiolus*, *Cymon* = *Acis*, and *Alsus*.
- “***** PLEBEII URBICOLI (*Skippers and Grizzles*). *Statura parva. Alis divaricatis integerrimis, posticis sæpe maculis subpellucidis. Antennis apice plus minusve uncinatis. Corpore (pro ratione magnitudinis) robustiore quam in præcedentibus*”: includes *Paniscus*, *Comma*, *Sylvanus*, *Linea*, *Tages*, and *Malvæ*.

It will be observed that the preparatory states are no more noticed in this scheme than if they were non-existent; and it is this overwhelming weight of authority, Ray, Linneus, Fabricius and Haworth, that has established Machaon on his throne of pre-eminence, with the yellows, whites, ringlets, fritillaries, hair-streaks, blues and skippers following, until it has become a matter of necessity to adopt this arrangement, and been held almost sacrilegious to question its propriety.

Dr. Leach was, I believe, the first in this country to grant the characters of the larvæ any place in systematic classification: we find in the ‘*Edinburgh Encyclopædia*,’ in Samouelle’s ‘*Useful Compendium*,’ and various other publications, a distinct admission of the importance of the larva, but the incubus of authority was too heavy for him: he could not summon up courage dethrone Machaon, the train of whites and yellows following in the rear as before; so his system came to nothing. He was well acquainted with the right road, but considered he had not sufficient authority to follow it.

DR. LEACH’S SYSTEM, AS PUBLISHED IN SAMOUELLE’S ‘*COMPENDIUM*,’ 1824.

“Section DIURNA.

“*Family I. PAPILIONIDÆ. Hind tibiæ with heels only at their extremities; wings all elevated when at rest.*

"*Stirps* I. *Caterpillar* elongate, cylindric; *chrysalis* elongate, angular; *tarsi* of the *imago* with distinct nails:" includes Machaon, Rhamni, Hyale, Edusa, Cratægi, Brassicæ, Rapæ, Napi, Cardamines, Daplidice, Sinapis, Euphrosyne, Selene, Cinxia, Artemis, Athalia, Lucina, Lathonia, Aglaia, Adippe, Paphia, Atalanta, Cardui, Antiopa, Io, Polychloros, Urticæ, C-album, Iris, Camilla = Sibylla, Galathea, Hyperanthus, Pamphilus, Medea, Tithonus, Janira, Megæra, Egeria, and Semele.

"*Stirps* II. *Larvæ* oval, depressed: *pupa* short, contracted, obtuse at both extremities; *tarsi* with very small nails:" includes Betulæ, Pruni, Quercus, Rubi, Dispar, Phlæas, Corydon, Adonis, Dorylas, Argus, Idas, Artaxerxes, Alsus, Argiolus, and Acis.

"*Fam.* II. HESPERIDÆ. *Hinder tibiæ* with two pairs of heels or spurs, one pair in the middle, the other in the usual place; *antennæ* distinctly terminated with a club, hooked at their extremity; *palpi* short, thick and squamose in front; *hinder wings* elevated when the insect is at rest:" includes Comma, Sylvanus, Tages, Malvæ, Linea, and Paniscus.

We now come to the 'Règne Animal,' by Cuvier and Latreille, a work that never has lost, and probably never will lose, its authority in the world of naturalists; and here we find the mixed system, the double-entry system, carefully carried out, and a classification is proposed, the principles of which have more or less permeated every system that has succeeded. The learned authors have, however, been unable wholly to emerge from under the shadow of authority into the clear sunshine of Nature, and although manifest improvement appears in the detail, Machaon still leads the van, and the gentlemen in yellow liveries and white liveries follow in approved succession.

LATRIELLE, IN 2ND EDITION OF 'REGNE ANIMAL,' 1829.

DIURNES (DIURNA).

- I. Those which have but one pair of spines at the end of the tibiæ, which have all four wings elevated when the insect is at rest, and the antennæ generally clavate, but sometimes almost filiform.
- a. Those in which the terminal joint of the labial palpi is either rudimentary or if present clothed with scales, and the claws of the tarsi are large, and the larvæ nearly cylindrical.
- * HEXAPODA, which have all the feet adapted for walking, and nearly alike in both sexes; the pupa is girt as well as attached by the tail, and the central cell of the hind wings is posteriorly closed: includes

Machaon, Podalirius, Apollo, Brassicæ, Rapæ, Daplidice, Sinapis, Cardamines, Edusa, Hyale, and Rhamni.

** TETRAPODA, which have the fore legs evidently shortened and unfitted for walking either in both sexes or in the female only; the chrysalis is suspended by the tail: includes Paphia, Aglaia, Adippe, Lathonia, Euphrosyne, Selene, Artemis, Athalia, Cinxia, Calbum, Urticæ, Polychloros, Antiopa, Io, Atalanta, Cardui, Sibylla, Iris, Galathea, Epiphron, Medea, Egeria, Megæra, Semele, Janira, Tithonus, Hyperanthus, Davus, and Pamphilus.

b. Those which have the third joint of the labial palpi naked; the claws of the tarsi are minute; the larvæ are onisciform, and the pupæ girt as well as attached by the tail.

† Those with the fore legs of the males much shorter than the middle and hind legs: includes Lucina only.

†† Those with the fore legs alike in both sexes: includes Rubi, Quercus, W-album, Pruni, Betulæ, Hippothoe, Phlæas, Bætica, Ægon, Medon, Icarus, Adonis, Corydon, Acis, Argiolus, and Arion.

II. Those in which the hind legs have two pairs of spines disposed as in the other Lepidoptera; the hind wings are generally horizontal when at rest, and the antennæ are frequently terminated in a decided hook. The larvæ, of which few are known, enclose themselves in folded leaves of their food-plant: within this retreat they spin a very slight silken cocoon and turn to smooth pupæ, which, like those of moths, are without angular prominences.

a. Which have the antennæ distinctly clavate: includes Malvæ, Tages, Paniscus, Sylvanus, Comma, Actæon, and Linea.

b. Which have the antennæ filiform: includes the genera Urania, Cydemon, Nyctalemon, and Sematura.

Here we have the earliest application to purposes of systematic arrangement two great truths,—*first*, that the genera Cydemon and Urania are butterflies; and *secondly*, that, united with the Hesperides, they constitute a primary division of those insects equivalent to those characterised by the erect position of the wings in rest.

A TABULAR VIEW OF HERRICH-SCHÆFFER'S ARRANGEMENT, 1843.

RHOPALOCERA or TAGFALTER.

PAPILIONIDES.

Family i. NYMPHALIDES: includes Melitæa, Argynnis, Vanessa, Pyrameis, Limenitis, Apatura, Charaxes.

Fam. ii. DANAIDES: includes Danais only.

Fam. iii. SATYRIDES: includes *Arge* = *Melanagria*, *Erebia*, *Chionobas*, *Satyrus*, *Epinephele*, *Cænonympha* = *Chortobius*, and *Pyrarga*.

Fam. iv. LIBYTHEIDES: includes *Libythea* only.

Fam. v. ERYCINIDES: includes *Nemeobius* only.

Fam. vi. PIERIDES: includes *Leucophasia*, *Pieris*, *Anthocharis*, *Colias*, and *Rhodocera*.

Fam. vii. LYCÆNIDES: includes *Lycæna*, *Polyommatus*, and *Thecla*.

Fam. viii. EQUITIDES: includes *Papilio*, *Thais*, and *Doritis*.

HESPERIDES.

Fam. ix. HESPERIDES: includes *Hesperidæ* only.

I may perhaps be allowed to remark that the family *Libytheides* appears to me by no means distinct from the *Satyrides*; its larva is slug-shaped, and is incorrectly represented by Hübner: it has the usual forked tail of the *Satyrides*, and its suspended pupa has all the characters of that familiar family.

I will now give my own views of the mode in which butterflies are most naturally arranged, as proposed in the 'Entomologist' for March, 1870; but it appears desirable first to allude to the praiseworthy labours of Mr. Westwood, in his 'Modern Classification of Insects,' in the second volume of which he has given a slight historical sketch of the bibliography of this beautiful group, together with a statement of his own views, which for many years I was unable to understand, owing to a misapplication of terms. "In the following arrangement," says Mr. Westwood, "I have endeavoured to combine the views of my predecessors. I accordingly consider the *Heterocera* as formed of two primary groups named *Nudi* and *Involuti*, from the naked or covered condition of the chrysalis, answering to the genera *Papilio* and *Hesperia* of Fabricius, regarding the characters exhibited by the latter or the family *Hesperiidæ* in all its stages as of far higher rank than those of any of the other groups." Now I think Mr. Westwood must have intended to write "*Rhopalocera*" and not "*Heterocera*," because the proposed divisional characters will not in any respect apply to these; and I think also the term "*Involuti*" can in no respect apply to the genus *Hesperia* of Fabricius, which, as I understand it, comprises the *Plebeii Rurales*, equivalent to our great modern family *Polyommata*, so essentially "*Nudi*," as well as the *Plebeii Urbicolæ*, equivalent to our *Hesperides*, so essentially "*Involuti*." Moreover, Mr. Westwood places the genus *Doritis* in his first or

typical family of "Nudi," whereas it is really the first or typical genus of the *Involuti*. I am especially desirous to notice these facts lest the superficial reader should suppose that my *Detegentes* and *Celantes* are equivalents of Mr. Westwood's *Nudi* and *Involuti* under altered names.

A TABULAR VIEW OF EDWARD NEWMAN'S ARRANGEMENT IN THE
'ENTOMOLOGIST' FOR MARCH, 1870.

LEPIDOPTERA PEDUNCULATA or BUTTERFLIES.

DETEGENTES, OR BUTTERFLIES OF WHICH THE PUPÆ ARE ENTIRELY
EXPOSED.

- § i. *Suspensi*, in which the pupæ are suspended head downwards.
- a. *Spinigeri*, in which the larva is spiny.
- Family i. ARGYNNIDÆ, with solitary larvæ: includes *Argynnis* only.
- Fam. ii. MELITÆIDÆ, with gregarious larvæ: includes *Melitæa* only.
- Fam. iii. VANESSIDÆ: includes *Grapta*, *Vanessa* and *Pyrameis*.
- Fam. iv. NEPTIDÆ: includes *Limenitis* only.
- b. *Limaciformes*, in which the larvæ are without spines, and are shaped like slugs.
- Fam. v. APATURIDÆ; includes *Apatura* only.
- Fam. vi. SATYRIDÆ: includes *Melanagria*, *Erebia*, *Pyrarga*, *Satyrus*, *Epinephele*, and *Cænonympha*.
- § ii. *Succincti*, in which the pupæ are supported by a band round the body, generally with the head upwards.
- a. *Onisciformes*, in which the larvæ are woodlouse-shaped, and have retractile heads.
- Fam. vii. ERYCINIDÆ: includes *Nemeobius* only.
- Fam. viii. LYCÆNIDÆ: includes *Thecla*, *Polyommatus*, *Lampides*, and *Lycænâ*.
- b. *Cylindræci*, in which the larvæ are cylindrical and wormlike.
- Fam. ix. RHODOCERIDÆ: includes *Colias* and *Rhodocera*.
- Fam. x. PAPILIONIDÆ: includes *Papilio* only.
- Fam.—Here intervenes the genus *Thais*, which properly constitutes a family, confined geographically to countries washed by the Mediterranean, and feeding on plants of the genus *Aristolochia*; the species are not well determined.
- Fam. xi. PIERIDÆ: includes *Leucophasia*, *Anthocharis*, *Pieris*, and *Aporia*.

CELANTES, OR BUTTERFLIES IN WHICH THE PUPE ARE ENCLOSED IN
A SILKEN COCOON LIKE THOSE OF MOTHS.

§ i. —

- a. *Bombyciformes*, in which the head of the larva is generally narrower than the second segment, and the body is altogether that of the Bombyces; they are generally confined to the alpine regions of both hemispheres, and feed on plants of the genus *Sedum*.

Fam. — Here intervenes the family DORITIDÆ, which contains *Par-nassius* and *Doritis*.

- b. *Capitati*, in which the head of the larva is generally wider than the second segment and distinctly exserted; this character is often in such excess as to make the larva appear hammer-headed.

Fam. xii. HESPERIDÆ: includes *Hesperia* only.

§ ii. —, in which those larvæ that are ascertained have a few feeble hairs scattered over every part of the body.

- a. *Synemonii*; larva unknown to me: the insects, as far as I am aware, are exclusively Australian, and the type is *Hesperia Sophia* of White.

Fam. — SYNEMONIDÆ.

- b. *Cydimonii*, in which the larvæ are described above under Section ii.; these are perhaps the most gorgeous of all butterflies; they are principally inhabitants of the New World, but I cannot exclude certain familiar species long known as inhabitants of the Old.

Fam. — CYDIMONIDÆ: includes the genus *Cydimon*, sp. 1, *Leilus*; 2, *brasiliensis*; 3, *Cacica*; 4, *Boisduvalii*; 5, *fulgens*; 6, *Sloanei*.

Fam. — URANIDÆ: includes the genus *Urania*, sp. *Rhiphæus*.

Fam. — NYCTALEMONIDÆ: includes the genus *Aleidis*, sp. *Orontes*; and genus *Nyctalemon*, sp. 1, *Patrocles*; 2, *Achillaria*.

Fam. — SEMATURIDÆ: includes the genus *Sematura*, sp. 1, *Lunus*; 2, *Selene*; 3, *Diana*; 4, *Empedocles*; and 5, *Phœbe*; and the genus *Coronis*, sp. 1, *Orithea*; 2, *Durvillii*; 3, *Egina*; 4, *Leachii*; and 5, *Evenus*.

The puzzling genus *Barbicornis* will probably eventually find a home in this section of pedunculate *Lepidoptera*.

Through this historical sketch, which is perhaps too long, but which I could with pleasure have extended, I arrive at Mr. Kirby's valuable volume, and will endeavour to give a summary of his arrangement, premising that, in accordance with the title, it consists entirely of a list of names, synonyms and references.

A TABULAR VIEW OF MR. KIRBY'S ARRANGEMENT, 1871.

DIURNAL LEPIDOPTERA.

Familia I. NYMPHALIDÆ.

Subfamilia I. DANAINÆ: includes Danaïs.

Subf. ii. SATYRINÆ: includes *Oeneis*, which = *Chionobas*, *Erebia*, *Melanargia*, which = *Arge*, *Satyrus*, which includes *Pyrarga*, *Epinephele*, and *Cœnonympha*.

Subf. iii. ELYMNIINÆ.

Subf. iv. MORPHINÆ.

Subf. v. BRASSOLINÆ.

Subf. vi. ACRÆINÆ.

Subf. vii. HELICONINÆ.

Subf. viii. NYMPHALINÆ: includes *Argynnis*, *Melitæa*, *Vanessa*, *Pyrameis*, *Limenitis*, *Apatura*, and *Nymphalis*.

Note.—*Nymphalis Jason*, *Kirby* = *Eribæa Unedonis*, *Hübner*, and *Charaxes Jasius*, *Herrich-Schæffer*.

Fam. II. LEMONIIDÆ = *Erycinidæ*, *Swainson*, and *Erycynides* of *Herrich-Schæffer*.

Subf. i. LIBYTHÆINÆ: includes *Libythea* only.

Subf. ii. NEMEOBINÆ: includes *Nemeobius* only.

Subf. iii. EUSILASINÆ.

Subf. iv. LEMONIINÆ.

Fam. III. LYCÆNIDÆ: includes *Lycæna* = *Polyommatus*, *H.-S.*, *Cupido* = *Lycæna*, *H.-S.*, and *Thecla*.*Fam.* IV. PAPILIONIDÆ.

Subf. i. PIERINÆ: includes *Leucophasia*, *Pieris*, *Gonepteryx* = *Rhodocera*, *H.-S.*, *Colias*, and *Euchloë* = *Anthocharis*, *H.-S.*

Subf. ii. PAPILIONINÆ: includes *Doritis*, *Parnassius*, *Thais*, and *Papilio*.

Fam. V. HESPERIDÆ.

The choice of terms by which to designate groups as families or subfamilies, and the names given to these groups, as *Satyrides*, *Satyridæ* or *Satyrinæ*, I regard as matters of no moment whatever: my own object in giving the termination of *idæ* to these families was that I would concede, as far as possible, the merit of Dr. Leach's formula, which precedes the others: Mr. Kirby's introduction of the new termination of *inæ* appears to have been on a different principle—the desire to give us an altered and improved formula: it will of course be obvious at a glance that the principle on which these groups are associated is very similar, whether their

appellations terminate in *ides*, *idæ* or *inæ*. But this granted and admitted to be unimportant, there are other discrepancies to which it is obvious that attention must be invited. Herrich-Schæffer makes a binary division of butterflies, quite as important as that of Lepidoptera into butterflies and moths: Mr. Kirby ignores this division, and proposes one entirely different—namely, the division of butterflies into five equivalent groups: this idea neither is, nor professes to be, original on Mr. Kirby's part, but whether original or merely adopted it is diametrically at variance with Herrich-Schæffer's and my own. And here it must be observed that Herrich-Schæffer's differs from my own in one important feature: in his eighth family, Equitides, he includes genera belonging to each of my primary groups, and which, so far as I know, have no natural characters in common. I allude to *Papilio* and *Doritis*. Of course having arrived at so different a conclusion, after much deliberation, I cannot be expected to agree with Mr. Kirby here.

Then, with regard to Mr. Kirby's families—his first family is one which has received the sanction of almost every lepidopterist of modern times: it exactly corresponds with Boisduval's and my own Section, *Suspensi*, and its subfamilies correspond with Boisduval's tribes almost rigidly, in the following manner:—

<i>Kirby's</i> NYMPHALIDÆ.		<i>Boisduval's</i> SUSPENSÆ.	
Subf. i. <i>Danainæ</i>	=	Tribe vii. <i>Danaides</i>	
„ ii. <i>Satyrinæ</i>	=	„ xii. <i>Satyrides</i>	
„ iii. <i>Elymniinæ</i>	=	„ xiii. <i>Biblides</i>	
„ iv. <i>Morphinæ</i>	=	„ xi. <i>Morphides</i>	
„ v. <i>Brassolinæ</i>	=	„ x. <i>Brassolides</i>	
„ vi. <i>Heliconinæ</i>	=	„ viii. <i>Heliconides</i>	
„ vii. <i>Nymphalinæ</i>	=	„ ix. <i>Nymphalides</i>	

I can see no sufficient reason for changing the name *Biblides* into *Elymniinæ*: I fancy also there is a disadvantage in altering the termination, and I must protest most emphatically against combining in one subfamily the slug-shaped larvæ of *Apatura* and the spiny larvæ of *Vanessa*: if, as I conceive, it be a first principle to consider as paramount the differences of larva in systems professing to be natural, then it is an abandonment of first principles to combine and intermingle genera having larvæ so decidedly different.

The second family, *Lemoniidae*, Mr. Kirby gives as synonymous

with Erycinidæ of Swainson: I am not certain that this is exactly so, for the limits of Swainson's family seem indicated rather than defined: the larvæ of this family require a much more careful investigation than they have obtained, before it can be possible to say whether all the genera that Mr. Kirby has catalogued are properly included within its limits; but there is one point on which I do not hesitate to dissent—the coining a new name to supplant one that has become so familiar as Erycinidæ or Erycinides; for I cannot doubt that it is intended as an equivalent of Boisduval's as well as Latreille's Erycinides. The plea for this fanciful and most objectionable change is that the name Erycina is preoccupied.

The third family, Lycænidæ, is generally accepted, and no objection can be raised to its acceptance; but I trust no entomologist will adopt the capricious, unwarranted introduction of the generic name Cupido for Lycæna, as proposed by Mr. Kirby. I do not contend that Schrank's is not the prior name, but I do contend that a name given seventy years ago, and which has been totally neglected and utterly forgotten, should never be revived and reintroduced.

Proceeding to the fourth family, Papilionidæ, we find it almost the exact equivalent of a combination between Herrich-Schæffer's sixth family, Pierides, and his eighth family, Equitides, which two families that learned author has separated by the interposition of the Lycænides, thus at the same time ignoring the affinity between the Erycinidæ and Lycænidæ.

Of Mr. Kirby's subfamily Papilioninæ, what can I say except that it is in every respect opposed to my own ideas of natural arrangement? The genera included are Mesapia, Calinaga, Hypermnestra, Doritis, Parnassius, Eurycus, Euryades, Sericinus, Thais, Teinopalpus, Papilio and Leptocircus: Papilio, which has hitherto led the van in the lepidopterous army; Leptocircus, which is probably an Erycina, Godart considered it so; the imperial Teinopalpus; and the nubigenous Doritis, more moth-like far than Urania, Thaliura, Nyctalemon and Sematura, which Mr. Kirby simply designates as "the following species of moths."

Of course I entirely dissent from Mr. Kirby's alteration of generic and specific names. In my comparatively insignificant task, the 'British Butterflies,' I have strained many a questionable point in order to preserve an old and familiar name: Mr. Kirby has availed himself of almost every possible opportunity of introducing a new

one. Entertaining views so diametrically opposite, it is impossible we can agree in the details. To the soundest of all nomenclaturists we are indebted for the utter confusion that now obtains in nomenclature! it was Latreille himself who wrote, "I acknowledge no law but that of priority." Thirty years subsequently a little band of so-called reformers discovered this law, and talked it over, and gave it another meaning: they said "This shows us that we ought to investigate every name, and see if we cannot find another and older name:" they went at it tooth and nail, and changed every name that could be changed for another name: thirty years they have been busied in this work, until the entire object of names is frustrated; and when we read of Cupido Thetis, and such unfamiliar creatures, we know not what is meant; the name conveys no image to the mind. The Committee of learned Thebans entrusted with this task knew well it would be unpalatable to the world of naturalists, because so difficult to be understood: a few of the very learned only could penetrate the mystery; something more was wanting to render it attractive to the masses: a happy expedient suggested itself, a "great novelty," an "unparalleled attraction," "so simple," "so ingenious"! this was the printing of the specific name without the initial capital, *thus*, oweni, grayi, waterhousei, stricklandi. This was a decided hit, and the micro-philosophers who failed to follow the arguments for changing the name of *Lycæna Adonis* to *Cupido Thetis* were delighted to depose the initial capitals, because the feat was performed with such facility, and it became as fashionable to write brown, jones and robinson, without the initial capitals, as to avow a belief in quarianism, table-turning, relations of analogy, or spirit-rapping, or, to come down to our time, in darwinism or spontaneous generation. To his infinite credit, Mr. Kirby has avoided this snare, this lure this tinsel; still he swallows the pill of name-changing, though stripped of its gilding. He lays down laws for this name-changing; for instance—"IV. The name of every genus which has been previously employed in either Zoology or Botany should [be] changed." He little knows the length to which this would lead him, or the difficulties which would surround him if he attempted to carry it rigidly into practice. The macro-philosophers, those who study Nature for her own sake, who employ names as we employ our own names, simply as a necessary, or, if you will, a convenient distinction, will certainly discard these puerilities as

utterly unworthy the expenditure of time or thought. In order to show the amount of change involved by adopting Mr. Kirby's rules in our British butterflies alone, I subjoin a list of those British species in which his nomenclature differs from my own.

<i>Kirby.</i>		<i>Newman.</i>
Melitæa Aurinia	=	Melitæa Artemis
„ Leucippe	=	„ Athalia
Mycalesis Medea	=	Erebia Medea
Epinephile Jurtina	=	Epinephile Janira
Cœnonympha Typhon	=	Cœnonympha Davus
Lycæna dispar	=	Polyommatus Hippothoë
Cupido Argus	=	Lycæna Ægon
„ Alexis	=	„ Medon
„ Artaxerxes	=	„ Medon, var.
„ Thetis	=	„ Adonis
„ Semiargus	=	„ Acis
Colias Croceus	=	Colias Edusa
Hesperilla Palæmon	=	Hesperia Paniscus
Thymelicus Thaumastus	=	„ Linea
„ Actæon	=	„ Actæon

My readers will see that more than one-fifth of the names in the most recent descriptive list of butterflies have been utterly changed by Mr. Kirby: if we apply the test to any other list of British butterflies, the proportion will be larger. Now supposing Mr. Kirby has applied the same principle of name-selection to the 7695 species in his Catalogue, there will be no less than 1539 names changed. I will not emphasise this assertion by italics or notes of admiration, but leave it in its naked simplicity. After all I do not think Mr. Kirby has applied his rules or those of the British Association rigidly or impartially: he will find on a reference to his own work, p. 203, it is stated, and truthfully, that the name of *Papilio Medea* was given by Fabricius, in 1775, to a very different insect to that which he has applied it: this *Medea*, according to his own law, should have been called *Æthiops*, which name he has transferred to another species named by Mr. Butler in 1868; both must come into the genus or subgenus *Erebia*, *Mycalesis* of Hübner being a mere myth. He alters the name of *Ægon*, dating 1775, to *Argus*, which was applied by Linneus to the following species: *Argyrotaurus* of Bergstraser, 1779, should have been the name, if any

alteration was made, but there is no plea, no excuse, for any change. A similar mistake appears to have been made with the name *Alexis*, which name Mr. Kirby has transferred, I believe for the first time, to *Medon*. The familiar and much-loved name of *Adonis* is superseded, at p. 367, by that of *Thetis*, which Mr. Kirby supposes was applied by Rottemburg to the female of this species. Then we know that *Minima* was the earliest name given to the Small Blue, yet Mr. Kirby retains, as I have done, the accepted name of *Alsus*. Mr. Kirby must therefore excuse me if I consider his selection of names capricious rather than methodical,—a source of confusion rather than of order,—and if I express a hope and a belief that they will not be accepted.

Then as regards the question of completeness, the query whether the author has brought up his work to the present day: although I have made this the last of my four cardinal points, I by no means consider it the least important. I did not expect to find, in a volume of seven hundred pages, the manuscript of which was only completed in March, 1871, those species which were first described during that year; but I thought it reasonable to look for species published a year before that date; the lapse of a clear twelvemonth I assumed to be sufficient for incorporating these novelties; I therefore turned to the March number of my own 'Entomologist,' *knowing* that it having been published at the latter end of February, Mr. Kirby must have had abundant opportunity of seeing it, and *supposing* I should find the names of the new species incorporated in Mr. Kirby's text. In this I was disappointed: in the said March number of the 'Entomologist' I found that Mr. Walker, the gentleman who has taken so much pains to catalogue for the Trustees of the British Museum the sessile-bodied Lepidoptera in that Institution, has described and named the butterflies collected in Egypt by Mr. Lord, observing that although Klug, in his 'Symbolæ Physicæ,' had contributed so much to the illustration of the insect-fauna of Arabia, the Entomology of Egypt has been for the most part neglected: among the novelties in Mr. Lord's collection we find nine new species of that beautiful and most interesting genus of butterflies, *Ceratœcia*, or *Lampides*, the larvæ of which feed *within* the pods of peas and other Leguminosæ, eating only the seeds; these new species are described with much care and ability under the names *Uranicola*, *Ferrara*, *Ethoda*, *Agave*, *Olympusa*, *Lyce*, *Bura*, *Pandama* and

Neis. On consulting Mr. Kirby's Index I fail to find the genus under either of its names, or the name of any of these new species; the British Museum is especially rich in this genus, and concluding that Mr. Kirby had availed himself of this National collection, I had great difficulty in accepting this an omission, yet from the Index I can draw no other conclusion. Such an omission, if it really be one, is a double disadvantage to the volume; it not only annoys the author neglected, but it leads him to the conclusion, perhaps erroneously, that others have shared the same fate.

It is no trifle to make an index for such a work as this: the *haute école* of this branch of science dispenses with alphabetical indices *in toto*: we find no such index to Westwood's 'Modern Classification' or Stainton's 'Manual,' yet to this laborious work Mr. Kirby has given us an alphabetical index, which, so far as I have hitherto ascertained, is accurate; but still it is unsatisfactory, because of the difficulty of obtaining a speedy solution of any inquiry you wish to make: this difficulty is a most formidable one, and is not to be overcome: it arises from the frequent recurrence of the same specific name; not to mention the names which occur in duplicate, triplicate, quadruplicate, or quintuplicate, we find that *Alcyone*, *Amaryllis*, *Arcas*, *Aurora*, *Beroë*, *Herse*, *Californica*, *Celebensis*, *Clara*, *Diana*, *Nephele*, *Pales*, *Pallida*, *Saundersii* and *Westwoodii*, each occur six times; *Alexis*, *Arete*, *Argus*, *Athalia*, *Endymion*, *Felderi*, *Formosa*, *Helena* and *Occidentalis*, each seven times; *Australis*, *Horsfieldii*, and *Moorei* each eight times; *Affinis*, *Batesii*, *Doubledayi*, *Godartii*, *Hubneri*, each nine times; *Crameri* ten times; *Hewitsonii* fourteen times; and *Boisduvalii* fifteen times. None of us look forward to the perpetuity of modern genera; indeed Mr. Kirby has shown that they are more ephemeral than the *Ephemera* itself: after living their little day in the purgatory of metamorphosis, they will inevitably revert to the Linnean genera from which they have been divided. When this day shall arrive, only one *Papilio Boisduvalii*, only one *Papilio Hewitsonii*, can possibly be retained; all the others must be rechristened. In the meantime, how is this large family of Boisduvals or Hewitsons to be disposed of? the *Boisduvaliis* stand thus in Mr. Kirby's Index, and they might almost as well be omitted altogether, for any information that Index affords—"Boisduvalii, 16, 55, 82, 116, 126, 161, 197, 229, 258, 336, 365, 426, 486, 517, 598;" supposing *Pamphila Boisduvalii* to be required, we must go through the whole list

of numbers, and expend at least a quarter of an hour in finding it. This might have been remedied by printing the first three or four letters of the generic immediately after the specific name, when the latter occurred more than once, *thus*—*Boisduvalii*, Eup. 16; *Leux*, 116; *Eub.* 55; *Hipp.* 82; *Opsi.* 126; and so on: at present one flounders in a quagmire of names, from which escape is impossible.

I regret to pen these observations, but I have been solicited by Mr. Kirby himself to undertake the task of reviewing his labours; the request implies some confidence in my judgment as well as in my fairness, for he would never prefer such a request to one whom he considered unable or unwilling to do him justice. I took up the volume without the slightest bias, unless in its favour, and have only invited attention to those supposed errors which have forced themselves on my notice during a protracted investigation,—errors which Mr. Kirby has not fallen into by neglect or inadvertence, but errors which he has considered well, adopted advisedly and intentionally, and would fain introduce to the little world of entomologists as advantageous reforms.

EDWARD NEWMAN.

*The Scilly Isles—Migratory Birds—Notes on Shooting, &c.,
during the Autumn and Winter of 1870-71.*

By F. R. RODD, Esq.

I venture to send you a few notes lately put together on the migrants observed at Scilly during the autumn of 1870 and the severe frosts which followed in November and December, remarking generally that the early autumn was characterised by the arrival of larger numbers than usual of the rarer Totani and Tringæ, and of the small hard-billed birds which do not breed at the Islands, Snow buntings, however, which often appear in considerable flocks, were very scarce, and hawfinches were represented by one individual only. Snipes and woodcocks appeared in about the usual numbers, except that in the earlier flights jack snipes outnumbered the full by two to one, and bartailed godwits were more common than usual. I observed no merlins; buzzards, usually arriving in autumn, did not appear till January. Shorteared owls, usually plentiful, seem to have missed the islands altogether; I picked up one early in September, which appeared to have been dead some time, their place was, however, taken by the longeared species,

which appeared to be almost gregarious in November, and unusually plentiful all through the winter. Wheatears, sedge warblers, stonechats, robins, wrens and hedgesparrows breed on the islands, but the flycatchers, pied, spotted and redbreasted (which latter will be remembered as having occurred on the Islands), willow wrens, blackcaps, gold- and firecrested wrens, black and common redstarts, whitethroats, redbacked and gray shrikes, seem either to have avoided the Islands altogether or to have appeared only as solitary individuals. Swifts had probably come and gone before my visit; sand martins appeared for a few days in October, and the November frost took away the last of the swallows.

End of July. By this date curlews, dunlins, common sandpipers and turnstones had arrived; the three former species breed on the Cornish moors, which they leave to a bird between July 10th and 20th, about which date green sandpipers begin to arrive from some more northern breeding-place.

August. Northerly winds prevailed during the month. Whimbrels and quails were observed on the 8th, the latter had probably bred as usual on the islands, and none were seen much later than September, though I have shot an occasional bird in Cornwall much later. Sanderlings arrived about the 20th, on which day the first snipes, about twenty, were observed, a rather larger arrival than usual so early, though a family party of five or six is often met with in August. The capture of a spotted redshank was recorded towards the end of the month, and common redshanks, green sandpipers and yellow wagtails observed.

September 1st to 15th. With south and south-west winds there arrived flocks of curlew sandpipers, which appear to have been particularly plentiful on the island of Bryher; five knots were shot between the 5th and 8th, and about the same time five pectoral sandpipers; one of these was described to me as an adult female with cuneiform marks on the breast, and scapulars edged with brownish white; another as a young male, with linear marks on the breast and scapulars, ferruginous edged.

September 5th. First wood wren seen.

September 7th. Bartailed godwit and teal.

September 14th. First gray phalarope and some common stints; no Temminck's stints at all this year.

September 16th. About this date, when your correspondent visited

the islands, remaining till January, the wind got S.S.E. with fog, and continued about that quarter, which is about the best for warblers and jack snipes, till October 5th.

September 20th. First jack snipes about this date.

September 22nd. Pied and spotted flycatchers, birds of the year; the former scarcely ever occurring in Cornwall, but a regular autumn visitant at Scilly. Willow wrens and an immature red-backed shrike in the Abbey Gardens.

September 24th. A pair of turtle doves and some stock doves at St. Mary's, the former very tame and seen on several other occasions. First flock of starlings.

September 30th. First golden plover seen. Wheatears getting scarce. Chaffinches coming to roost in the Abbey Gardens.

October 3rd. A careful inspection of the island of St. Mary's produced nothing of interest but the last quails.

October 5th. Last day of the S.E. wind. We visited St. Mary's again with a pack of wild dogs, thinking to find some landrails in the moors, and saw none, but in two small wet places, not more than a few yards across, we found enough snipes to bag three couples of full and no less than fourteen couples of jack snipes.*

October 6th. On this and the following days three bartailed godwits, a common redshank, ring ouzel, stock dove, arctic tern, spotted crake and Schinz's sandpiper were captured, the last I saw feeding on the mud by the fresh-water pool at St. Mary's, and at first supposed it to be a jack snipe, until on taking flight it showed its white upper tail-coverts, like a little green sandpiper; though flushed several times it uttered no note, and commenced feeding again immediately. It is curious that the only previous specimen from Scilly should have been obtained by Mr. Pechell on October 11th, 1854, and mine on October 10th, both birds being shot about the same place.

October 6th to 9th. S.W. wind, with heavy rain, changing on the 10th to N.N.E., and S.E. on the 11th, when St. Mary's moors produced four full and eleven jack snipes and two wigeon, all fresh

* A similar migration was observed on the Cornish moors some years ago at the beginning of October, when on the last day of an east wind and long drought I killed nineteen couples of snipes, most of them jacks, in the forenoon; the weather completely breaking up at 2 p.m., with thunder and a flood of rain from the N.W. On both these occasions it would appear that the snipes migrated with the last of a favourable wind, as if foreseeing the rain, which would open up their winter feeding-grounds.

arrivals, the latter very tame, as is usual with the immature birds of this species, which arrive exactly at this date on the Cornish moors. I observed also a few snow buntings, goldfinches and greenfinches, a common redstart on a wall, and in the Abbey Gardens a great tit and five blue tits, which remained through the winter feeding on the scale-blight on the acacia trees, but were joined by no others. Golden, gray and lapwing plover became plentiful about this date. The first redwings, large flocks of starlings, with an attendant pair of sparrowhawks and a few missel thrushes, arrived.

Westerly gales prevailed to the end of the month, and nothing fresh appeared but a flock of gray phalaropes, about thirteen in number, which I was able to watch for some time, as they were perfectly tame, dipping among some sea-weed at the edge of a rock where I was sitting; several were observed in South Devon and Cornwall about this date.

October 30th. Greenshanks frequented the pool at Tresco about this time: they kept, as usual, huddling together on a flat stone, taking a flight round, uttering their peculiarly beautiful notes and returning again to the same spot.

October 31st. First woodcock shot.

November 1st. The wind got round to the S.E. in the night, and till the 12th varied from that to N.E., the best possible quarter for birds, and the Scolopacidæ arrived in great force: without detailing each day's sport, forty woodcocks, twenty-five snipe and fifty jacks were shot out of this flight.

November 7th. Visited St. Martin's Island, observing on the way that great northern and the smaller divers had arrived. A few furze-bushes on St. Martin's Head, the nearest land to Cornwall, were tenanted by six woodcocks, a landrail, some siskins, and a longeared owl, which, settling again, sat blinking in the sun, raising its feet alternately, evidently not relishing its prickly resting-place. Though the rest of the island was carefully beaten I only saw two more woodcocks.

November 8th. Walking to St. Mary's Moors saw an immature spotted flycatcher and the last wheatear; a very tame purple sand-piper was sitting on a stone by the fresh-water pool. I put up five longeared owls from a bush in Holy Vale, and several others elsewhere. In the moors were some full and a great many jack snipes: the water rails were a positive nuisance, scuttling about in all directions and bothering my old dog terribly. Coots had also

come in the night, and were in considerable numbers at Tresco. The reeds having been eaten by cattle at St. Mary's, the flock on the pool there disappeared the next day. On the way home I shot a wood pigeon and heard of others having been seen; they only appear in winter, and not often then. Saw a great flock of rooks and some jackdaws, which left on the first change, except a few immature birds, one of which was eating a redwing alive. Five hooded crows, which remained all the winter, were feeding on a dead horse in a wet field to-day. The wind was now due east, blowing strong, a gale sometimes, with dark weather, and a stream of migratory birds seemed to come from the eastward every night. I heard them passing over night after night, but except redwings and fieldfares I could not make out their notes; they appeared to be pursuing a course straight into the Atlantic, which must have brought them to grief, for a vessel arriving at the islands a few days later reported that a crow (? rook) and a great flock of starlings had come on board when 200 miles west of Scilly; some remained on the rigging till the ship anchored in the Roads; the rest verified the proverb, "*Incidit in Scyllam qui vult vitare Charybdim*," by being made into pies by the sailors.

November 13th to 24th. Period of westerly gales, and no migratory movement except in a retrograde direction.

November 25th. Change of wind from S.W. to S.E., bringing the first good flight of full snipes, St. Mary's Moors giving seventeen full and eleven jacks on the 26th.

November 28th. A female goosander shot on Tresco shore: this bird was extremely tame, and appeared to take no notice, though approached nearly in the open. Saw some good old males in bright plumage, but failed to stalk them. A flock of shovellers were resting on the sea to-day, but out of shot.

December 1st. Wind more easterly, with frost and snow, a most unusual occurrence at the islands.

December 2nd. Saw several jack snipes round Tresco pool; they must have arrived the night before.

December 3rd. The expected flight of jack snipes had arrived in St. Mary's Moors, and twelve couple were shot. A few very wild full snipes had also come, but I only got half-a-dozen of them.

December 9th. Visited Jean Island, and saw three ring ouzels in company with some starlings on a rocky hill. Great flocks of

lapwings everywhere, and fieldfares flying about in an unsettled manner.

December 10th. Made a clearance of the snipes in St. Mary's Moors: from some cause or other game lay very well to-day, and ducks, usually on the pool and shy, lay close in the wet ditches. During this frost about forty couple of full and jack snipes in nearly equal numbers, with some cocks, ducks, wigeon and teal were shot.

December 11th. Change of wind to S. and S.W. till the 20th, with high temperature.

December 15th. A buzzard appeared, followed by one or two more, which left after a few days: the first comer, however, remained feeding on rabbits on the Abbey Hill, and roosting in the fir trees there.

December 17th. A male blackcap was feeding on the berries of a myrtle in the Abbey Gardens: he looked very weak and in bad plumage, and was not seen afterwards. The moors gave twelve couple of snipe, a woodcock and a female pintail, in the afternoon.

December 21st. Saw large flocks of duck, wigeon and shovellers. Cold weather again, with a northerly gale on the night of the 21st.

December 22nd. Bitter east wind, threatening snow. Walked over the high land of St. Mary's in the afternoon. About three o'clock snipes began to appear from somewhere; it was difficult to tell the direction they came from, as they descended from a great height in wisps of four or five to perhaps twenty, sweeping down on the ground with a whish of the wing like a flock of golden plover, passing close by: some settled on the high land, but it was difficult to tell whether the birds remained or only rested for a few minutes preparatory to making a fresh start. There were one or two jack snipes on the bare downs, and the wet fields round the moors were at dusk perfectly alive with both species in a very disturbed state.

December 23rd. Started for the moors immediately after breakfast, and believe the snipes were actually leaving the island at the time, as those put up did not settle in again, but went straight away westward before the east wind, which at about two o'clock brought up a heavy snow-storm lasting for three hours, during which I shot several snipes flapping about overhead like woodcocks in the evening. At last I had to take refuge in a farm-house. There were eighteen couple of snipe in the bag at night. From the 23rd

to the 28th I made four excursions in the snow to the moors, finding plenty of snipes; the best bag being twenty couple, with woodcocks, duck, teal, plover, and curlew. The snipes in this frost were in splendid condition.

December 27th. Walked out to the northern point of Tresco, and watched the flocks of birds, chiefly redwings and starlings passing over. All came from the N.W., against a rather fresh S.E. breeze, as if from Ireland to the French coast. I did not observe that any settled on the islands and many passed far out at sea. In a walk round Tresco shore, besides the usual birds, saw several bartailed godwits, and could plainly see the difference of size between the males and females, some of which doubled the weight of the males. Purple sandpipers were on Lizard Point as usual, sitting very tamely on the rocks, and uttering their curious little chuckling note as they flew off. Some odd-looking birds, with conspicuous white upper tail-coverts, were in a flock of greenfinches and linnets on a stubble-field; they turned out to be bramblefinches, and a shy dark bird out of the same flock a reed bunting.

December 28th. My attention was drawn to a pair of wood larks to-day by their shrill* note. I never recollect seeing this species in the West before, but a pair are recorded as having been killed at Scilly in December, 1859.

Starlings and redwings were now dying everywhere, and crept into holes and corners of windows for shelter: thousands roosted on the furze-bushes on the Abbey Hill. I counted over two hundred one morning which had fluttered down to a road below to die: the starlings were in beautiful plumage, but appeared to have died in pain, with open beaks and tails bent downwards, the redwings to have succumbed without a struggle.

December 31st. A fine flock of seventeen swans appeared on the last day of the year: when first seen they were in a line, then abreast, and after flying round a few times went off to the south in a wedge-like form. The frost broke up to-day with a south wind and high temperature: a fortnight later the bulbs in the Abbey Gardens were some inches high, and Narcissus flowering in sheltered places.

January 3rd, 1871. Saw several missel thrushes on Tresco; they had probably arrived with the S.E. wind on the 31st. I had seen none during the severe frost.

* Query "shrill." Their note is soft and flute-like.—*E. N.*

January 6th. Found a male pochard, killed by the telegraph-wire in St. Mary's Moors: at different times this winter a woodcock and five snipes were killed in the same manner, the effect of the wire on a snipe being generally to cut the wing clean off. Some stalked snipes, shot at different times, had probably suffered from a similar accident. A brace of partridges on Tresco killed themselves by flying against some strained wire-fencing. From this date to the end of the month there appear to have been few arrivals of birds, and scarcely a snipe remained. A spoonbill, which had been seen in company with herons all the season and had been mistaken for a great white heron, was shot on the 26th; and a large bird, twice the size of the buzzard on Abbey Hill, frequented Samson, but escaped capture.

F. R. RODD.

The Whitby Wader.—Through the kindness of Mr. Gould, I saw yesterday the "Whitby Wader," which had been sent to him for his opinion as to its identity. It turns out to be a young male of the ruff (*Machetes pugnax*). I see by the stand on which the bird is, that it has lately been called "Bartram's sandpiper," which name is certainly wrong, and Mr. S. Gardner, of Sheffield, is wrong in his identification. This is not the first time this bird, the ruff, has been taken, or rather mistaken, for Bartram's sandpiper.—*F. Bond*; 203, *Adelaide Road, South Hampstead, N.W.*

Ringed Plover breeding at a distance from the Coast.—This species is far more fluvatic in its habits, in Aberdeenshire at least, than one would suppose from consulting books. Its range, inland, does not extend so far as that of *Tringa hypoleucos*, and it is more local in its occurrence, but I have found it as far up the Dee, the Don and the Doveran as *Hæmatopus ostralegus*, and I have even found it on the Ythan, the Ugie, the Tannar, and other mountain tarns which the oystercatchers visit only when collected in coteries—a habit of the males in summer: when so assembled they serenade the valleys and mountains, as do the swifts the tall spires and factory chimneys of our cities. The ring dotterel, according to my notes, retires to its breeding-ground at a later date than either the common sandpiper or the oystercatcher. My earliest dates occur in 1868; and other seasons show a corresponding difference. In that year the oystercatcher arrived at Forglen House, on the Doveran, on the 19th of March and at Huntly on the following day. The common sandpiper arrived at the island on the Dee, opposite Banchory House, on the 28th. At this date I received specimens from Buchan, killed at where the Garvel and the Gouar meet, and also from Rothymay on the Doveran; but the earliest I can trace the

ring dotterel is at Park Hill, on the Don, on the 9th of April, and on the following day I found it at Park House, on the Dee. These are the earliest dates of their going inland in my note-book, but generally April is well advanced before the birds have all left the coast. I have seen the ring dotterel on the Doveran near Turriff and at Huntly, and on the Bogie, the Ugie, and the Ythan as far up as Auchterless: at the mouth of this river, which is famous for sea-trout and wild-fowl, it breeds on the sands at Forran and Furvie in considerable numbers; and at the mouth of the Don, on the south side, it reared its young, about thirty years ago, on a gravelly flat, which is now sanded up. On this river I have observed the ringed plover at Fintray House, Monymusk, White Haugh and the Bridge of Alford, and I have received specimens from as far up as Strathdon. On the Dee I have also seen it at Nether Banchory, Cults, Upper Banchory, Aboyne, Invercauld, and between Marr Lodge and the Linn; and on one occasion I heard its soft note when engaged with a number of friends in pitching biscuits (picnics) at the greedy salmon in the Inver at that historic and romantic spot, The Colonel's Bed.—*W. Craibe Angus; Aberdeen, October 2, 1871.*

Common Tern.—An immature male bird of this species was killed on the 28th of September near Dunnose; it was knocked down with a stone while hovering overhead. It had a deep cut on the breast, and the plumage was much soiled. I am inclined to believe that the tern had been attracted by the innumerable objects floating around and about a recently wrecked vessel. That the bird, owing to the rough and boisterous weather, had been long fasting, I had, on dissection, ample proof, nothing being found in the gizzard—an elongated sack in a state of collapse—but a little half-digested sea-weed. Though I know the common tern, and had, during my stay in Morayshire, opportunities of observing them, I was puzzled when asked to identify the bird, it being too small for an adult common tern and too large for the little tern; and it was not till Montagu, Temminck and others had been referred to that it was made out to be an immature bird of the common species, the *Sterna naevia* of Linneus, the "guifette" of Buffon. This tern, in point of size, corresponds with one mentioned by Montagu as having been shot near Bath in the month of September, the weight of which was three ounces, the length twelve inches, breadth twenty-seven inches and a half: he remarks, "We cannot agree with Dr. Latham in considering these birds (guifette or *naevia*) as varieties of the Sandwich tern; the vast disproportion of the size alone forbids it." Had he been referring to the disproportionate size of the bill I could better have understood it, seeing that of the Sandwich tern is two inches and a half long, and that of the common tern but one inch and a half.—*Henry Hadfield.*

Richardson's Skua, &c., in Norfolk.—About a month ago a Richardson's skua was shot on the beach at Southwold, Suffolk. Last August I obtained several greenshanks, green sandpipers, a whimbrel and some curlews there.

The other day I procured from the market here (Liverpool) a gray plover, which I believe to be of a very unusual size. Length not quite thirteen inches; expanse of wings twenty-four inches; weight nine ounces. I have certainly never seen such a large one.—*H. Durnford; Claremont House, Waterloo, Liverpool, November 1, 1871.*

Richardson's Skua at Rye.—On the 2nd of October I received from Mr. J. H. Gurney, jun., a specimen of Richardson's skua, which had been shot at Rye, in Sussex, during the last week in September. There is a circumstance about the plumage of this bird which strikes me as being worthy of notice, *viz.*, that although it is in fully adult plumage (white breast, long tail-feathers, &c.) there are still a few feathers with the light-coloured tips remaining in the back, plainly indicating that it was only a bird of the second year, and had never passed through the uniform dark plumage represented in the centre figure of Yarrell's picture, which both Yarrell and Macgillivray consider the second year's plumage. Now I cannot speak from my own experience about the changes of plumage in this bird, as this was the first recent specimen I ever examined: but it seems to me that the assumption of the fully adult plumage in the second year has not been previously noticed. The specimen had been so long dead that I am unable to speak positively about the sex, but I believe it to have been a male. Will any good naturalist give me the benefit of his experience of this bird in the 'Zoologist.' I should not have troubled you with these remarks, had I not been advised by Mr. Gurney to make a note of it, as I called his attention to it in a private communication.—*J. G. Tuck; Tostock House, near Bury St. Edmunds, Suffolk, October 8, 1871.*

Trunk Turtle in Bridlington Bay.—I have to record the occurrence on our coast of a very large and rare turtle (*Sphargis coriacea*). On the evening of October 25 two men, whilst herring fishing in Bridlington Bay, Yorkshire, about a mile from the harbour, had their attention attracted by something unusual disturbing the nets, and on hauling in found an immense turtle entangled in them, which they succeeded in securing with some difficulty. My informant states that "it measured from the snout to the tail eight feet: across from the tips of the flappers eight feet; round the thickest part of the body seven feet six inches; and is estimated to weigh upwards of 1000 lbs." This great turtle caused no little astonishment when towed into the harbour and landed on the beach between seven and eight the same evening, and is I believe the largest ever recorded as having been taken on our shores. It died on the Friday morning following its capture.—*Alwin S. Bell; November 8, 1871.*

Silvery Hairtail at Penzance.—I received on Saturday the 18th instant a specimen of the silvery hairtail picked up dead on the beach near Mousehole, in this bay. It is just of the size of those I had last winter. It is two feet six inches long over all.—*Thomas Cornish; Penzance, November 20, 1871.*

Great abundance of Pilchards on the Cornish Coast.—Referring to the large catches of herring this year on the east coast, it is worth noticing as a coincidence that the catch of pilchards on this coast has exceeded everything known for the last twenty-three years. The fish are remarkably large and in excellent condition.—*Id.*

Deaths from Wild Beasts and Snake-bites in India.—As a fitting sequel to my snake-notes (*Zool. S. S. 1889*), kindly insert the following. It is from the 'Calcutta Government Gazette,' September, 1871, and was published in 'The Times' of October 24th:—

Deaths during the three years ending 1869 from wild beasts and snakes in India.

FROM WILD BEASTS.		FROM SNAKE-BITES.	
Madras	888	Madras	760
Bombay (exclusive of Seinde, &c.)	118	Bombay (exclusive of Seinde)	588
Bengal	6,741	Bengal	14,787
N.W. Provinces	2,168	N.W. Provinces	2,474
Punjab	310	Punjab	1,064
Oude	569	Oude	3,782
Central Provinces	1,347	Central Provinces	1,961
Coorg	147	Coorg (no return)	—
Hyderabad	129	Hyderabad	226
British Burmah	107	British Burmah	*22
Total	12,554	Total	25,664

The rewards for the destruction of wild beasts and snakes are to be continued and extended.—*C. Horne.*

Dormouse.—One of my gardeners, in brushing up the place yesterday, swept from under the branches of one of the fir-trees a dormouse and its nest, and brought it to me, wondering what it was. When in my hand it opened its eyes, breathed very hard and rapidly, and made a squeaking noise as if to complain of its having been so unceremoniously tumbled out of bed. I rolled it up again, put its tail over its pretty face, placed it in a box of rose-leaves, from which it never moved, and this morning it is sound asleep, but still breathing very rapidly.—*W. C. Hewitson; December 16, 1871.*

English Ornithology of 1871.—To anyone reviewing the bird-occurrences in the British islands during the year 1871, a fact is presented with which

* Evidently incorrect.—*C. H.*

entomologists have been long familiar, and this is the manner in which species, which up to a certain date had been very rare and only chance visitants, all at once, without any assignable cause, become comparatively common. For instance, it is not many years since the gray phalaropes which had been obtained on our coasts might easily have been counted. They now present themselves in such numbers at the time of their autumn migration as to suggest that there had been a permanent deviation in their line of flight. Another bird, the Japanese thrush (the White's thrush of Yarrell), until quite recently, had only been noted in one or two historical instances. By showing itself in England twice during the year, on the Mendips in January and in Norfolk in October, it gives promise that before long it will no longer be considered the most unexpected rarity on our bird list. Such changes as these are difficult to explain, but the observant naturalist will know that they are to be expected; he will also be prepared to find that familiar migrants are often capricious in the quarter of our island they select to visit in greatest numbers. One year woodcocks are quite scarce in Devon and Cornwall, while plentiful in Lincolnshire and Norfolk. In the autumn of 1871 a bird very seldom seen on the western coasts, but well-known on the eastern, the greenshank, as if by compensation for the absence of the woodcock on a preceding season appeared, plentifully in Devon. Another instance of a capricious migration is furnished by the quail: their abundance in the West and South-West of England in 1870 made it likely that they would be met with again in no inconsiderable numbers the following season, as birds which had escaped the sportsman would naturally return to the place of their birth, but the writer of this notice having made inquiries in his own district, where quails were plentiful in the previous year, has heard of only a few instances of the bird during the autumn of 1871. The last heard of was obtained on the Blagdon Hills towards the end of November. The winter months are the normal time for the visit of the quail to the West of England, single birds being seen usually in December and January, in years when no quails had been noticed during the summer and autumn. The year 1871 will be chiefly remembered by British ornithologists by the occurrence of a flock of great bustards in Devonshire in January, and by the appearance of single examples of that noble bird in other parts of the kingdom. Salisbury Plain, their ancient traditional home, was revisited by the bustards, and two were obtained in that district. Another is recorded as having been shot in Middlesex, another in Northumberland, while two out of the Devonshire flock of seven fell victims to the gun. The year did not produce many rare waders. Beyond a pair of pectoral sandpipers, which were shot in North Devon, and a yellowshank* in Cornwall, there is not much to record: For years there

* I have much hesitation as to the correct manner in which to spell this word. From the analogy of "redshank," "greenshank," it seems best to write it as I have

had not been such a grouse season as that which fell to the luck of visitors to the moors in 1871; the birds were numerous and strong, and even on the 12th of August on many moors would not sit to the dogs, and long before the end of the month were not to be approached. So great were the bags of red game during the first week of the shooting that fresh birds were sold in London at less than a shilling each. Partridge-shooters were not so fortunate as those who went after the grouse, for the cold nights of June proved fatal to numerous coveys, and those which were found in September were small in size and short in number, so that in many places the shooting was postponed until the middle of the month. The severe frosts of the early winter drove an unusual number of wild-fowl to our coasts and snipe to our marshes, but no rare Anatidæ were recorded as having been obtained among them. It is satisfactory to hear from observers of cliff-birds at several of their stations, that the working of the Bird Act is already perceptible in the increased numbers of guillemots, puffins and gulls. We can only hope that such birds as the Sandwich and roseate terns may also benefit by the protection which is now extended to sea-fowl during their nesting-season, and that the Act has not come too late to prevent their utter desertion of our rocky coasts.—*Murray A. Mathew; Bishop's Lydeard Vicarage, December 8, 1871.*

Ornithological Notes from Guernsey. (*continued from S. S. 2866.*)—Mr. Couch told me that on the night of the 1st of October he heard a great many birds flying over the town, but could not distinguish their cry, which he described as something like that of the peewit.

October 2nd.—Five pures, a greenshank and a kingfisher were shot. 10th.—A golden plover shot. 12th.—Whilst out on the cliffs I saw a great number of wheatears, which were very tame. Also two kestrels, which rose from close to me; after hovering about for a moment they separated and flew away. There were several rock pipits. 16th.—Heard a sky lark singing. The weather has been very warm; this may account for it, for it is late. A hen nightjar and a ring ouzel were shot. This ring ouzel I had seen some days before with another one; they have both been shot I am sorry to say, for they are not very common here. 27th.—Saw a flock of swallows collecting.

November 1st.—Saw two swallows for the last time. Ring dotterel shot.

done. Some people talk of the "yellowshanks," others of the "yellowshanked sandpiper," and I believe both these designations are unexceptional in point of grammar and logic. I have little doubt that a blunder is perpetrated every time we write "redshank," "greenshank;" but as these names have become "familiar in our mouths as household words" there is little harm in retaining them, and for the sake of consistency making another little error in the name "yellowshank."—*M. A. M.*

3rd.—The whitetailed eagle mentioned already shot in Alderney. 4th.—I saw a great many flocks of starlings; very probably these have come from Alderney, as an immense number have been there. 8th.—A redbreasted merganser, a turnstone, a ring dotterel and a snipe were shot by Mr. Cecil Smith. 11th.—Saw in the market, Norfolk plover, jack snipe, fieldfare, song thrushes, missel thrushes and blackbirds. The fieldfares were selling for fourpence each; missel thrushes at fourpence a couple; no wonder they are shot if they fetch *that* price. 14th.—The whitetailed eagle, which was shot here.

During this month one or two "shell parrots" have been shot, apparently not having been in confinement. The only way I can account for this is, that a year or two ago a gentleman brought some of these pretty birds over here in hopes of getting them to breed, and some have escaped the gun up to the present time.—*C. B. Carey; Candie, Guernsey, December 14, 1871.*

Another Whitetailed Eagle in Guernsey.—Since I wrote last another whitetailed eagle (*Haliaëtus albicilla*) has been shot, and Mr. Couch is now preserving it for Mr. Cecil Smith. It is a rare occurrence that two such eagles should be shot within a fortnight so near each other (one in Alderney the other here). It was a little smaller than the other, measuring, from beak to tail, two feet eleven inches; tip to tip of wing, six feet nine and a half inches; beak, three inches and three-eighths. It was shot on Tuesday, the 14th of November, in a field where some sheep were feeding; probably it was going to choose one for its dinner.—*C. B. Carey; November 17, 1871.*

Foot of the Whitetailed Eagle.—The feet of the whitetailed eagles I have had are not reticulated as described by Yarrell; the front of tarsus in my specimens, if they are the whitetailed eagles, have seven scales; side and back of tarsus reticulated; between the last scale and the scales of middle toe are seven or nine lines of reticulations, twelve scales on the middle toe, six on the inner toe, four on the outer toe, and four on the hind toe; remainder of toes, inner, outer and hind toes, reticulated.—*James Couch; 16, Pollet Street, Guernsey, December 9, 1871.*

Hen Harrier, Norfolk Plover and Redbreasted Merganser in Somersetshire.—On the 26th of November, Mr. Haddon, of Taunton, showed a very fine specimen of the hen harrier: it had been shot a few days before on the Blagden Hills not far from Taunton; it was a young bird of the year, and from the size I think a hen bird. The gentleman who shot it shortly afterwards sent over a quail to be stuffed with it, which he had shot near the same place a few days later. In the case of the Norfolk plover, instead of the usual verdict in these cases, of "wilful murder," I must return the more open verdict of "found dead;" it was picked up at a place called Wrexton Gorse, near Crowarnlee, Heathfield, on the 21st of November; it was a young bird, a veritable thickknee with the swelled legs. The probable

cause of death was starvation, as it was very thin, and the stomach contained nothing but a little dark fluid, and when I skinned it I found no sign of any wound. The redbreasted merganser was killed in the canal some time the last week in November. It was in the "dun diver" plumage.—*Cecil Smith ; December 5, 1871.*

Snowy Owl at Southrepps, in Norfolk.—The snow and sharp weather which set in last week brought over a noble snowy owl, which fell to the gun of Mr. Painter, a farmer at Southrepps. It was shot not more than two miles and a half from this house, as it sat in dignified solitude in a turnip field, on Sir Fowell Buxton's land. It had been seen flying about in the morning by some labourers, and particularly by an invalid person confined to his room, who saw it as he lay on the sofa, out of his window, and took it for a wild goose. It was shot on Monday morning, December 4th, and carried up to North Walsham on Thursday, where, it being market day, it created quite a sensation among the farmers, and left at the shop of Mr. Spinks, hairdresser, to be stuffed. I saw it a few hours after, before the eyes had been removed, and noted how strong the nictitating membrane was. I was also in time to dissect the body, which contained a great rat's head, and was that of a female. I wish I could add that I had obtained its skin, but its owner has not yet decided to part with it. From the numerous broad bands of deep black on a fresh white ground I judge it to be immature. It is twenty-one years since one has been shot in Norfolk, yet so favoured has been this neighbourhood that five specimens are now recorded to have occurred within a radius of a few miles (see Stevenson, 'Birds of Norfolk,' i. p. 59). Montagu says in the Appendix to his Supplement that Mr. Bullock received a specimen from Norwich, about 1811, "with an assurance of its having been killed in that neighbourhood," which would be earlier than any mentioned by Mr. Stevenson, and much earlier than the Northumberland specimens in 1823, erroneously believed by Selby (B. B. i. p. 97.) to have been the first seen in England. A MS. note of Donovan's, however, in Dr. Tristram's copy of the Dictionary, upsets its authenticity: it runs as follows:—"Mr. Bullock has told me another story about this owl, and, very unfortunately, in his own handwriting."—*J. H. Gurney, Jun.; Northrepps, Norwich, December 12, 1871.*

White's Thrush.—It is a curious coincidence that two specimens of this rare thrush have been this year (1871) recorded in the 'Zoologist' as occurring on succeeding days; the first seen in Kent by Lord Clifton on 5th January; the other killed on the 6th January, at Langsford, in Somersetshire, as noted by Mr. Cecil Smith, and I take the liberty of calling attention to this interesting approximation of dates.—*J. H. Gurney; November, 1871.*

[A correspondent for whose judgment I have the highest respect discredits the statements about the occurrences of White's thrush: he says

that missel thrushes, birds of the year, have the appearance of belonging to the rarer species. I trust ornithologists will look carefully at specimens, with a view to ascertaining whether this is the case, before they announce other occurrences of this bird.—*E. Newman.*]

Great Black Woodpecker near Oxford.—Many of our ornithologists affect a scepticism concerning the occurrence of the black woodpecker in England. There appears nothing improbable in so near a neighbour paying us a visit. I observe in the official Report of Entomological Society of London, held on the 6th of November, 1871; published in the 'Zoologist' for December (S. S. 2875), that an additional instance of this kind is incidentally mentioned in connection with *Formica herculeana*. Perhaps somebody can throw a little more light upon this black woodpecker. It is not said whether the bird was exhibited at the meeting of the Entomological Society, so that we cannot be sure that there has not been a confusion between the greater spotted woodpecker (*Picus major*) and the black woodpecker (*Picus martius*). To this confusion many of the recorded instances of the latter must be assigned, the greater spotted having often been mistaken for its black Norwegian brother. There is something also which seems to call for explanation in a "labouring man" having a bird on sale shot in Lord Abingdon's preserves. If it had been one of his Lordship's keepers who had had the bird to dispose of there would be an air of greater probability about the story. It would be very interesting to secure an undoubted English-killed *Picus martius* for our British list. So it is to be hoped that something more may be heard about this one reported from Oxford.—*Murray A. Mathew; Bishop's Lydeard, December 2, 1871.*

Quails Breeding in Nottinghamshire.—In June last I turned down six pairs of quail; it was towards the end of the month, and I thought it would be too late for them to breed. When cutting a field of barley, the one next to that in which I turned them out, the men found a nest with thirteen eggs in it; they broke one and found it near hatching. The young ones all ran in a few days after. We had two more beries, one of five and the other three: these were often seen by the men working in the field. I only shot three during September, but they were seen up to the end of October. They did not stray far from the field I turned them out in. I think if they had been turned out sooner every pair would have bred. They were constantly to be heard calling in the evenings of July and August. I mean to turn down a good many next year, about the beginning of May, and hope to have some good shooting. During the first week in December, large flocks of green plovers were constantly passing over from north to south: they continued passing for three days; there must have been thousands. A good many wild geese have gone over in the same direction. I have also seen two large flocks of bramblings.—*J. Whitaker, Jun.; Ramsdale House, Notts.*

Proceedings of the Entomological Society.

November 20, 1871.—A. R. WALLACE, Esq., F.Z.S., President, in the chair.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—*Mémoires de la Société de Physique et d'Histoire Naturelle de Genève*, tome xxi. 1re partie, and 'Table des Mémoires contenus dans les tomes i. à xx,' presented by the Society. 'Nouveaux Mémoires de la Société Impériale des Naturalistes de Moscou,' tome xiii., livr. 3; 'Bulletin de la Société Impériale des Naturalistes de Moscou, 1870,' Nos. 3 and 4; by the Society. 'Additions to the Australian Curculionidæ,' part 1; 'Descriptions of New Genera and Species of Longicornes, including three new Subfamilies;' 'Notes on Coleoptera, with Descriptions of New Genera and Species,' part i.: by the author, F.P. Pascoe, Esq.

By purchase;—Loew, 'Systematische Beschreibung der bekannten europäischen zweiflügeligen Insecten,' band ii.

Election of Members.

The following gentlemen were balloted for and elected:—C. V. Riley, Esq., State Entomologist for Missouri, as Foreign Member: Lieut. Barzillai Lowsley, R.E., of George Town, Demerara, and F. Raine, Esq., of South Road, Durham, as Ordinary Members; and W. H. Miskin, Esq., of the Supreme Court, Brisbane, Queensland, as an Annual Subscriber.

Exhibitions, &c.

Mr. Dunning said that since the last meeting of the Society he had been informed that, at the precise time when the example of the great black woodpecker (*Picus martius*), referred to by Prof. Westwood in connection with *Formica herculeana*, was said to have been shot near Oxford, several specimens were exposed for sale in Leadenhall Market, and these were presumably of Norwegian origin.

Mr. E. Sheppard could not reconcile the occurrence of a gigantic species of ant, not hitherto known as British, in the crop of a bird the origin of which was open to doubt, with the idea that this bird had actually been shot under the circumstances already alleged.

Prof. Westwood said that Mr. C. Robertson, of Oxford, assured him that he had repeatedly seen the bird in the woods at Clovelly, and Mr. Jackson, of New College, had observed it in East Devon.

Mr. F. Smith was informed that thirty instances of its occurrence in Britain had been recorded, and that in one case an example had been shot by the grandfather of the present Lord Derby.

Mr. Bond asserted that there existed no authentic British example; all the reported occurrences had been traced and found to be erroneous, save that of Lord Derby, and much doubt existed concerning this.

Mr. M'Lachlan suggested that the matter might be set at rest by visiting the locality in which the bird was said to have been shot, and finding the ant.

The discussion ended by Prof. Westwood promising to furnish further evidence on a future occasion.

Mr. Bond exhibited a series of small pale examples of *Lasiocampa trifolii*. He had made a similar exhibition a year or two since, and Mr. Mitford, their discoverer, furnished the following information, tending to prove that they formed, at any rate, a distinct local form. The locality is Romney Marsh, Kent, and the larvæ were first found by Mr. Mitford in May, 1866, feeding in the tufts of a very wiry grass growing in the shingle above high water mark; they were again found and bred in May, 1867: in August, 1868, two dead moths, exactly similar, were observed in the same locality: and in August, 1871, eighteen examples were bred. While hunting for these larvæ, Mr. Mitford's son found smaller caterpillars, which produced *Lithosia caniola*, thus showing an entirely new locality for this species.

Mr. Bond further exhibited two remarkable varieties of *Clisiocampa castrensis*. One of them, a female, had the left-hand wings shaped like those of the male, though the insect otherwise showed no tendency to be gynandromorphous; the other, also a female, had the right-hand under wing marked and banded as in the upper wing.

Mr. Stainton exhibited, on behalf of Mr. D'Orville, a singular variety of *Agrotis comes*, of Hübner, according to Staudinger's recent Catalogue, equivalent to the *Tryphæna orbona* of authors.

Mr. M'Lachlan exhibited a striking case of mimetic resemblance between two common North American Libellulidæ, not very closely allied. These were *Libellula pulchella*, of Drury, and *Plathemis trimaculata*, of De Geer. In *L. pulchella* the sexes were nearly similar with respect to markings; in *P. trimaculata* they were dissimilar, and the female bore a remarkable resemblance to either sex of *L. pulchella*, both in the ornamentation of the wings and in the thoracic markings.

Mr. Bates said he had never observed any similar instance, and was inclined to consider this case as one in which the markings had repeated themselves, rather than as indicating actual mimicry.

Prof. Westwood suggested that observations should be made as to whether the female was liable to the attacks of fishes when depositing her ova, and instanced the case of *Ephemera*, in which the fish eagerly devoured the female insect when full of eggs, but rejected the male as affording no nutriment. A discussion ensued as to the liability of dragon-flies to the attacks of birds. Mr. F. Smith had seen swallows engaged in the pursuit of small Agrionidæ, and Mr. Briggs had witnessed, in the streets of London, a combat between a sparrow and a large dragon-fly, probably an *Æschna*, and in this case the insect overcame the attacks of the aggressor. It was

suggested whether this latter case might not have been an exemplification of the natural pugnacity of the sparrow, rather than an indication that the bird attacked the insect with a view to food. Mr. Jenner Weir incidentally mentioned that he had himself witnessed the fact of an *Agrion* descending into the water to deposit its eggs. The President thought the larger species (the *Libellula*) might be strong enough to defend itself from some unknown enemies, whereas the smaller one (the *Plathemis*) was more at their mercy: but he thought the matter should be referred to American entomologists to observe the habits of the two species in question, and report thereon.

Mr. F. Smith exhibited the cocoons of the American *Tiphia tarda*, of Say, given to him by Mr. Riley: these were double, there being an outer flimsy covering and an inner hard case, from which the imago escaped by making a small hole at one end. He was inclined to believe that the larvæ of *Tiphia* fed upon those of *Aphodius*, for he had observed the larvæ of the British species in galleries under dried-up cow-dung, but never actually in the act of devouring the *Aphodius* larvæ. Prof. Westwood suggested that examination should be made of the inner hard cocoon in order to decide whether it be made of silk or formed from an exudation of the larva.

Mr. Müller called attention to an apparently unrecorded instance of an insect destructive to green peas. He had last summer observed the outside of pea-pods showing large whitish blotches, and had found that these were produced by the attacks of the larvæ of a Thrips, fifty or sixty larvæ often being engaged upon one pod, and retreating into the adhering calyx when alarmed.

Mr. McLachlan read observations upon the synonymy of two common species of European ant-lions, usually known as *Myrmeleon formicarius* and *formicalynx*, showing the discrepancies in the Linnean descriptions in the various editions of the 'Fauna Suecica' and 'Systema Naturæ,' and proving that Linné more or less confused the two species. The Swedish entomologists affirmed that the species known as *formicalynx* by modern authors (described by Linné as an African insect) was the only ant-lion occurring in Sweden, and that it was the true *formicarius* of Linné, whereas the spotted-winged species, usually known by that name, was not an inhabitant of their country.

The Secretary announced that Mr. Miskin, of Brisbane, elected that evening, wished to enter into correspondence with entomologists for the purpose of exchanging Lepidoptera and Coleoptera.

New Part of 'Transactions,' and of the 'Catalogue of British Insects.'

Part iii. of the 'Transactions' for 1871 (published in August) was on the table, as was also a further instalment of the proposed general Catalogue of British Insects, comprising the Aculeate Hymenoptera, compiled by Mr. F. Smith.—*R. M'L.*

Ornithological Notes from Devonshire, &c.

BY GERVASE F. MATHEW, F.L.S.

December 4th, 1869. A tolerably hard frost last night, followed in the morning by a fresh north-easterly breeze, which continued the greater part of the day. I started by the ten o'clock train for Instow, returning to Barnstaple by the salt-marshes and oozes (that is, what remains of them) on the banks of the Taw, a distance of about eight miles. In the cricket field at Instow, hopping about in company with a male stonechat, I recognized an old friend, the black redstart. I first made the acquaintance of this species at Gibraltar, where it is very numerous, the locality being well suited to its habits; and I afterwards observed it in profusion at Corfu during the winter months, especially on the island of Vido, where it was always to be seen among the ruins of our late forts. The present specimen, on my nearer approach, flew over the cricket-field wall and was lost to sight: fortunately the wall was not a high one, and on looking over I noticed it sitting on a stone on the rocky beach within a short distance of me. A charge of No. 8 speedily put an end to its existence, and on picking it up I found it to be a young male of the year in fair plumage. This is the first, to my knowledge, that has been procured in the neighbourhood, although I am aware several have been seen. The oozes, which formerly at this time of the year were frequented by vast flocks of ringed plovers, dunlins, curlews, turnstones, &c., were to-day, comparatively speaking, deserted, and I do not think I saw more than a hundred altogether. The large autumnal flocks of bartailed godwits, knots, curlew sandpipers, &c., have likewise, I am told, almost ceased to visit this once favoured river; and the various species of terns, which were plentiful, and by their beautiful appearance and butterfly-like flight so enhanced the charms of an autumnal landscape, have betaken themselves to regions where food is more abundant, or where they are less persecuted. The cause of this is easily explained: railways, embankments and drainage are the foes that have driven our birds away. Hundreds of acres of salt-marsh, such excellent feeding-ground for all the Tringæ, have been reclaimed, and are under cultivation; a railroad from Barnstaple to Bideford runs close to the river, and the passing trains frighten the birds away as soon as they arrive. I

am afraid in a few years nothing will be seen save a few gulls and a stray ring plover or two. The only bird I killed to-day, besides the redstart, was a teal, and this is becoming a rarity. Among a large flock of starlings, which rose out of some rushes, I observed a white or cream-coloured bird.

December 7th. A fine mild day. Shouldered my gun and went for a walk. Observed a whitethorn bush thick with fresh green leaves, blossoms, and bright red berries! I never remember having seen such a thing before, and could scarcely credit my senses until I had picked a spray of the blossom and satisfied myself there was no mistake. During my walk to-day I had to pass an old stunted and weather-beaten oak which grows alone in the midst of a thick thorn hedge. It is an old friend of mine, and one I shall long remember, for from its branches, when a schoolboy, I shot my first fieldfare. To-day, as I approached, it a great commotion was apparent among the bushes beneath it, and among its lower branches a great mob of small birds, chiefly chaffinches and tomtits, had assembled, and were uttering vociferously their cries of alarm, which made me fancy a hawk had captured a bird and was enjoying his meal in the tree. However, I was greatly mistaken, for I had no sooner come to this conclusion when, instead of a hawk appearing, out flew a great gray shrike! I was taken completely by surprise, so much so that I never thought of firing at the bird, which flew over the hedge and disappeared. The tree from which this bird flew out almost overhangs a stream, and between it and the hedge is a railing, which from its sloping position is difficult to climb over: well, just as I was scrambling over it I heard a flutter above me, and out came another shrike, bearing a small bird in its claws, with which it made off. I was in hope that, having this burden, it would soon alight, but in this I was disappointed, for although I searched for some time I saw no more either of this or the other one. I was greatly vexed at not having fired at the first one. I returned home about three in the afternoon, and, hawking down a ditch in a field close to the town, was a queer-looking owl: it seemed, at a distance, to be a dark specimen of our common friend the barn owl, and as the stupid bird came within range, and still puzzled me, I fired and brought it down, and on running up discovered I had killed a remarkably light-coloured variety of the short eared owl.

December 8th. A dull, disagreeable morning, with a strong breeze from the south-east. Started by the ten o'clock train for Instow, from whence I crossed by boat to Braunton Burrows. On arriving near the spot where on a former occasion I procured a Richard's pipit, I kept a sharp look-out, and had not proceeded very far through a dense bed of sea-rushes before I heard the unmistakable note of the species. It was close at hand, and in a moment or two I flushed it. It flew a short distance, and alighted on an open spot, where I shot it. It proved to be a larger example than the two previously obtained, and in slightly better plumage. This bird is becoming tolerably common in England. I have little doubt many more might be found at Braunton, and should not be surprised to hear it has been discovered breeding there.

December 24th. A blackthroated diver fired at to-day conducted itself in an extraordinary manner. When first seen it was floating on the water, about forty yards from the embankment behind which my father and I were stalking, and seemed to be basking in the bright sunshine. When we showed our heads above the bank, the bird, which when previously seen was broadside towards us, had faced round, and did not afford such a fair shot as it would have done had it remained in the same position. I fired and it immediately dived, but instead of reappearing, as one would have imagined, a greater distance off, it suddenly rose close to us, thrust its neck forward in a plane with the surface of the water, and uttered several prolonged melancholy cries. We both of us fired this time, and it again dived, but not so quickly as on the first occasion, and when it next came to the surface it was out of range, and evidently mortally wounded as it floated down with the current, frequently repeating that peculiarly mournful cry, and when last seen was apparently dead. Both my father and myself have often fired at these birds but cannot remember having heard one give utterance to any sort of cry.

Last month a woodcock having white wings was shot in a covert in the neighbourhood of Bideford. This bird, or one like it, had frequented the same locality for five successive seasons, but was so wary that no one could shoot it, although many attempts were made.

Fieldfares, Redwings, Gannets, &c.—November 1st, 1871. I walked this afternoon from Cremill, the landing point under Mount Edgecombe to Whitsand Bay. A cold, raw day, with half a gale from the eastward. While crossing the hill near Maker Church a large flock of fieldfares and redwings, numbering some hundreds, passed overhead, and further on, in a recently ploughed field, these birds were in thousands, and very tame, as they scarcely took any notice of me as I leant over a gate watching them: one or two only, that were in closer proximity than the others, merely moved a little further off, where they sat head to wind, cowering as near the ground as possible, to avoid the strength of the cutting blast; and nearly the whole flock were in this position. I suspect they had just arrived, and were resting after a long journey, for I noticed none of them were feeding, and when I returned, about an hour afterwards, they had all gone. One rarely, as far as my experience goes, observes fieldfares in large flocks in Devonshire. When I was a boy it was considered a grand thing to shoot one of them, and a feat but seldom performed, for the "blue-back" is a wary bird. Perhaps their appearance in such numbers at this time of the year portends an early and severe winter. On arriving on the heights above Whitsand I found the sea beneath was comparatively smooth, for the wind blowing off the shore the bay was sheltered by the cliffs: gannets had taken advantage of this state of things, and a hundred or more were flying to and fro below me. It was a pretty sight, so I ensconced myself behind a jutting piece of rock and watched them. Beyond, on the horizon, a bank of blue-black clouds had gathered, and this, when the birds flew low, set off their snowy plumage with great intensity. They did not seem to be fishing eagerly, but flying more for sport than aught else; now and then, however, one would leave the rest, and descending with a tremendous rush, dashed the spray in showers each side of him as he disappeared beneath the sea: emerging in a second or two, with a few heavy flaps over the surface, he slowly got on wing and rejoined his companions. Among this party of old birds I observed an immature specimen, a circumstance I do not remember having noticed before. Off Cape Finisterre, at the mouth of the Tagus and in the Channel, I have often seen, during the winter months, immense flocks of old birds, but I cannot recollect ever having seen a young one amongst them. One day especially, I can call to mind, when we were some twenty miles to

the southward of the Eddystone, the day being perfectly calm and the sea like glass, we steamed right into the midst of an enormous flock, and, as we passed through them, very few attempted to rise, those that did appearing to have great difficulty in getting off the water, owing, I thought, to the want of a breeze to help them; many scuffled over the surface for a hundred yards or so, and settled, but the greater part preferred swimming out of the way; I did not observe one attempt to dive. Among this host (I can form no idea of their numbers, for the sea was dotted with them all round the ship as far as one could see) not a single immature bird was visible, and at the time I thought it a remarkable fact, but I have since learnt that the old and young almost invariably keep apart. On another occasion, when some thirty miles to the southward of the Skelligs, small rocky islands on the south-west coast of Ireland, we passed a small party of young birds: the day was boisterous, and they were flying very low, and came quite close to the ship. It is strange one does not see the young birds oftener: where do they go to? And now to return to the present time: while watching these gannets, a harsh note just behind startled me, and, on looking round, I saw a fine old male ring ouzel, perched on an ant-hill a short distance from me; it was a fearless bird, and never moved when I rose to go away, and I could hear it call long after I lost sight of it. The strong breeze had brought many birds to the sheltered cliffs to roost: stonechats and titlarks were plentiful, and as I was leaving, shortly before dusk, a flock of thirty or forty missel thrushes arrived, but seemed uneasy at my presence, and would not settle down anywhere quietly. *Scopula ferrugalis* was started from a stunted gorse bush close to where I sat: it flew a short distance and pitched on a plant of *Galium*, from whence I easily boxed it.

GERVASE F. MATHEW.

Admiralty House, Devonport,
November 1, 1871.

A few Ornithological Notes from Guernsey.

By CECIL SMITH, Esq.

As I have lately been paying a short visit to Guernsey,—from the 1st to the 16th of November,—I send you a few ornithological

notes from that and the neighbouring islands. This visit being at a different time of year, I have been able to add considerably to my list in the 'Zoologist' for 1866 (S. S. 447).

Whitetailed Eagle.—First, though certainly not least, two white-tailed eagles were shot in the islands during the time I was there; the first at Alderney, about the 1st of November—I cannot give the exact date, as I afterwards heard it had been kept alive a day or two after it was shot, before it was sent over to Guernsey to be stuffed. This will probably account for the empty state of its stomach, which contained nothing but one small bone. I saw it in the flesh at Mr. Couch's (the birdstuffer) shop, on the 3rd of November, the day of its arrival in Guernsey. The second was shot at Bordeaux Harbour, Guernsey, on the 14th; it was brought to me the same day, and I took various measurements of both this and the Alderney bird, with which I do not trouble you, as I think a notice of the two captures with the various particulars of the birds has been sent to you by another correspondent.

Common Buzzard.—I also saw one of these birds in the flesh at Mr. Couch's shop; he informed me it had been shot at Alderney about the same time as the eagle.

Redwings and Fieldfares.—Were both numerous, but probably had only just arrived, as I did not see any examples hanging up in the market with the blackbirds and thrushes till after I had been about a week in the island; after that there were plenty. The live birds were also numerous in various parts of the island, but I did not see any for the first two or three days after my arrival.

Ring Ouzel.—I saw one of these birds at Mr. Couch's shop which had been shot in the island just before I arrived; I also saw another in the market, a young bird of the year, with only a very slight indication of the white mark on the breast.

Tithys Redstart.—I saw one of these birds, a fine male, on the 1st of November, not far from the Vale Church: as I did not want a specimen, I did not shoot it, but watched it for a considerable time: its movements reminded me much more of the wheatear than of the common redstart, as it flew from the top of one large stone or rock to another, always selecting some elevated and conspicuous situation, such as the top of a wall, a large stone, or a turned-up turf; the only thing which reminded me of the common redstart was the peculiar quiver of the tail. On the 8th I saw two more tithys redstarts near Cobo Bay: the place in which

I saw the two birds, as well as the first, was much more suited to the wheatear than to the redstart—barren sheep-walks, with wild rocks and stone walls close to the shore ; no bushes, orchards, hedges or gardens, which one is apt to associate with one's old summer friend.

Starlings.—Exceedingly numerous, and in the evening large flocks of them might be seen flying in all directions in search of convenient roosting-places; whether they always found these in the Island I could not be sure, but a few of the flocks appeared to leave, flying out to sea, as far as I could follow them with my glass, in the direction of Jersey and the French coast: I think it not at all improbable that they went to one of those places, for even here, where there is certainly no lack of the best accommodation, they fly long distances in the evening, and about sunset flock after flock may be seen flying by to their roosting-places, where they assemble in almost incredible numbers. These birds, though the large numbers appear to be only migrants, must still be considered as partially resident, for, although I did not see any of them myself during my visit in the summer of 1866, I have seen several of their eggs in collections which were taken in the island. In Alderney I heard also that they were very numerous, more so than they had been for many years.

Norfolk Plover.—I saw one of these birds hanging up in the market; it was so fresh and apparently so recently killed—I should think that morning—that in all probability it was killed in Guernsey, though I could not ascertain the fact quite for certain. There was also a specimen in Couch's shop which had been shot in the island.

Golden Plover.—There were two or three tolerably large flocks of these birds about, but they were very wild, so much so that I only succeeded in bagging one; two others which I shot unfortunately fell into the sea, and were carried out by the tide before I could get to them. I always found the golden plover by the sea, amongst hard rocks and loose rough shingle, which would afford little or no food; so they had probably selected these places not as feeding-grounds, but as affording some refuge from the incessant gunning which was going on inland; the gunners, however, do not appear to have been very successful with the golden plover, as I saw very few in the market.

Peewits.—I only saw one small flock of these birds: they were

very wild, and seem to have taken good care of themselves, as there were none in the market.

Squacco Heron.—I purchased a specimen of this bird from Mr. Couch, which he told me was shot in the island in the summer of 1867, and from inquiries I have made I have no doubt his information is correct.

Ruff.—There was one young ruff in Couch's shop which had been shot in Guernsey just before I got there.

Woodcock, Snipe and Jack Snipe.—Several couples of each of these birds were killed whilst I was in the island. I did not get a shot at a cock myself, and only one at snipe, as I could not get into the most likely places for them without trespassing on somebody's ground. The snipe which I bagged I found, with two others which rose wild, in a most unlikely place for snipe, below high-water mark on hard granite rock and amongst huge boulders: like the golden plover, they had probably betaken themselves to these inhospitable rocks to escape the gunners inland.

Little Stint.—I saw one in a state of being skinned at Couch's: it had been shot just before I got to the island. Shore-birds were by no means plentiful: there were a few very wild curlews; some purres and golden plovers; no gray plovers, knots or saunderlings did I see, though I looked diligently for them. The only birds really numerous on the shore were the ring dotterel and turnstones: I got one or two specimens of the latter, which were interesting as showing the change from summer to winter plumage; by-the-bye, Yarrell's short note of the winter plumage,—“the black, white and ferruginous portions of the plumage are not so rich in colour,”—is hardly correct, as the ferruginous disappears altogether, as also does the white on the top of the head.

Water Rail.—There was one in the market which had been killed the day before in the island, but I could not make out the exact locality.

Teal.—A friend of mine, after a hard day's shooting, from six in the morning till dark, told me he succeeded in bagging one teal and one woodcock: this does not appear to be all he shot at, as he told me he had five double shots at one snipe, which got off after all. Besides the teal killed by my friend, I also saw one or two in the market and one at Couch's shop.

Common Scoter.—I saw only one, at a place called Peville Bay, on the west of the island, but I believe they are occasionally common.

Goosander.—A small flock of these birds flew by the steamer, as we were going through the Little Russel, on our passage home, on the 16th.

Redbreasted Merganser.—I shot one, a hen bird, out of a flock of five which flew by me as I was scrambling over the wild rocks between Cobo and the Vale Church, on the 8th—a wild stormy day, with occasional gleams of sunshine; most beautiful these five birds looked as they flew by, their glossy buff breasts glistening in the sun and backed by a dark cloud.

Grebes.—I saw one fresh-killed little grebe in the market, and Couch had in his shop skins of the rednecked, Sclavonian and eared grebe, the two latter in full plumage, but the skins had been left about in his shop till they were in the last stage of dissolution; otherwise I should have bought them.

Great Northern and Redthroated Divers.—There were several skins of both these birds in Couch's shop, and I believe they are by no means uncommon in the islands during the winter, though I did not see either any fresh-killed specimens or any live birds, even from the steamer on our return, which I expected to.

Common Tern.—One at Couch's, killed about the same time as the ruff and the little stint mentioned before. This list, with the 68 species mentioned by me in the 'Zoologist' for 1866, the American bittern in the 'Zoologist' for 1871, and a few species enumerated by Mr. Harvie Brown in the 'Zoologist' for 1869, makes up about a hundred species: I know it is far less than the number contained in Professor Ansted's list, but I do not think his list reliable, being founded on the specimens in the Museum, many of which, for the reason given in my former note, I do not consider proved to have been killed in the islands. A resident ornithologist might, I have no doubt, in a year or two easily double this list, and might give us some very interesting notes, not only on the rarer occurrences, but also on the arrival and departure of migrants; but the neglected state of the Museum alone would show that there is at present no one living in the island who takes any great amount of interest in the subject. On my former visit I was much struck with the state into which the Museum had been allowed to fall; but now continued neglect, and the consequent moth and natural decay, have done their work so thoroughly that many of the best specimens are not recognizable: even Mr. Blake-Knox would not be able to identify many of his

friends the gulls : in many instances nothing but the shafts of the feathers are left, all the rest having been devoured by moths ; and very odd-looking fellows some of these moth-eaten specimens are, with nothing but the shafts of the feathers sticking out of the skin, “like quills upon the fretful porcupine.” But I suppose I must not say much more upon this subject, as the Museum is now closed to the public, and it was only with a good deal of trouble, and rather as a favour, that I obtained admission to this “chamber of horrors.” I think I ought, however, to add that since I left I have been informed that Mr. Couch, the birdstuffer, has offered his services gratuitously, one day a week, to restore all such specimens as may be found capable and worthy of restoration.

Of their live birds, the Guernsey people seem to have taken more care than of their dead ones in the Museum, for since my last visit the States have passed a “Sea-Bird Preservation Act,” or, to give it its more correct title, “Ordonnance provisoire pour la protection des oiseaux de mer.” A few extracts from this Act may be interesting to some of your readers, more especially as some discussion has been going on in the columns of the ‘Field,’ ‘Land and Water,’ and other papers, as to the utility of our own Act, and the benefit to be derived by either curtailing or extending the list of birds to be protected, and the time during which such protection is to be afforded. After reciting that “le nombre des oiseaux de mer sur les côtes des îles de ce bailliage * a considerablement diminué depuis plusieurs années ; que les dit oiseaux sont utiles aux pêcheurs, en ce qu’ils indiquent les parages où les poissons se trouvent ; que les dit oiseaux sont utiles aux marins en ce qu’ils annoncent pendant la durée des crouillards la proximité des rochers.” The Act goes on to provide for the protection of both the birds and their eggs, as follows :—“Sec. 1.—Il est défendu de prendre, enlever ou détruire les œufs des oiseaux de mer dans toute l’étendue de la juridiction de cet île, sur la peine d’une amende qui ne sera pas moindre de sept livres tournois et n’excédera pas trente livre tournois.† Sec. 2.—Depuis ce jour au 15 Octobre prochain, il est défendu de tuer, blesser, prendre ou chasser les oiseaux de mer dans toute l’étendue de la juridiction de cette île. Sec. 3.—Ceux qui depuis ce jour au 15 Octobre prochain, auront été trouvés en possession d’un oiseau de mer récemment

* The bailiwick extends over Guernsey, Alderney, Sark, Jetto and Herm.

† 14 livres tournois equal to £1.

tué, blessé ou pris ou qui auront été trouvés en possession de plumage frais appartenant d'un oiseau de mer, seront censés avoir tué, blessé ou pris tel oiseau de mer, sauf à eux de prouver le contraire. Pareillement ceux qui depuis ce jour au 15 Octobre prochain auront été trouvés en possession d'un œuf de l'année d'un oiseau de mer seront censés avoir pris et enlevé le dit œuf sauf à eux de prouver le contraire." The penalty in each case is the same as in Sec. 1. Sec. 4 contains the list of the Oiseaux de Mer:— Les Mauves, Mouettes, Pingouins, Guillemots, Cormorants, Barbelottes ou Hirondelles-de-mer, Piesmarans, Petrels, Plongeurs, Grebes, Puffins, Dotterelles, Alouettes-de-mer,* Tourne-pierres, Gannets, Courlis et Martin-pêcheurs. To explain the words "depuis ce jour," I should say that the Act has hitherto only been passed temporarily at the Chief Pleas after Easter in each year, and supposed to expire on the 15th of October. The last bird mentioned would be by no means a bad addition to our own Act, and I think I may safely say that many of us would be glad to see both the kingfisher and the water ouzel also in our list of favoured birds, though how far they would come within the reasons given for protection in the recital of this or our own may be difficult to see; however, the same may be said of many of the favoured birds in both Acts. Some of the birds mentioned in the Guernsey list can enjoy but little of the protection so kindly offered them by the States; the divers, for instance, do not breed in the islands, and, in fact, do not arrive in the autumn until about the expiration of the close-time, and depart again soon after the Easter Chief Pleas. Neither have the gannets a breeding station in the islands, and do not appear to arrive, in fact, till the beginning of November; for though I saw a good many of these birds between Alderney and Guernsey on the passage home, I saw none going out, though it was quite daylight before we reached Alderney, and I kept a bright look-out to see what birds were about. In my former visit, in the summer, I only saw one, an immature non-breeding bird. I do not know, either, what Mr. Frank Buckland would say to the addition of cormorants to the list of protected birds, as, from some recent communications to 'Land and Water,' he does not appear to think the gulls ever as useful as the recital in both our own and the Guernsey Act would make them out to

* Ring dotterel, purres, sanderling, and all the small shore-waders, are known by the name of "Alouettes-de-mer."

be. This Sea-bird Act is, I believe, to be passed as a permanent Act at the next Chief Pleas, which will be soon after Christmas, when in all probability a few modifications will be made. A definite fixture for the close-time to begin will have to be made, also its present extent: as late as to the 15th of October seems to require some reconsideration, as, long before that time, the young birds have left the breeding-stations, and are perfectly well able to take care of themselves; so that the destructive practice of shooting the young birds on the nest, and when standing on the rocks, before they are fully fledged, and the cruelty of killing the old birds when engaged in feeding their young, and thereby leaving the young ones to starve, would be entirely prevented by a much less extended close-time, say, instead of to the 15th of October, to the 1st of September, or, as in our own Act, to the 1st of August, a time which I believe to have been found to work very well; at least very few, if any, applications to Quarter Sessions for its extension have been made. I hope also, as in the English Act, the name of the chough may be added, for this interesting and beautiful bird seems, as in our own parts, to be on the decrease; it cannot perhaps be said to be "utile aux pêcheurs," but that small objection would, as before observed, apply to many of the birds mentioned in Sec. 4. The constant and dangerous shooting at small birds in gardens and hedgerows close to the road, which is certainly a nuisance, but is alleged to be necessary, might probably be obviated by a short close-time to the Hawks, and as there is no gamekeeper, except in the very small island of Herm, to raise objections, there would probably be little or no difficulty in getting such an addition made.

CECIL SMITH.

December 5, 1871.

Ornithological Notes from North Lincolnshire.

By JOHN CORDEAUX, Esq.

(Continued from Zool. S. S. 2861.)

NOVEMBER AND DECEMBER, 1871.

THE weather during the latter half of October and the first fortnight of November has been generally mild and open, with little wind, and an entire absence of those heavy storms and gales

we usually experience at this period. What little wind we have had has been from N.W. to E. This period has been characterised by an almost total absence of the usual flocks of autumnal migrants; these, in all probability, in consequence of the very favourable season for crossing the North Sea, have passed across this district without alighting, and we have this year first heard of their appearance from stations far inland and not along the coast. Thus there has been an almost entire absence of woodcocks, field-fares, redwings, goldcrested wrens and migratory blackbirds, which in rough weather and with adverse winds invariably alight for a few days or hours in our bleak east-coast marshes before proceeding inland to their winter haunts. Of woodcocks, often so numerous along this coast after heavy north or north-east gales, I have never even seen one, and, so far, only heard of two killed anywhere in this neighbourhood. Of those northern migratory birds which make these marshes their home throughout the winter months, as the hooded crow, golden plover, twite and snow bunting, we have had quite average numbers, excepting the latter, which this year have visited us in enormous and most unusual numbers. They are at this time by far the most common of the smaller birds found in the marshes.

Snow Bunting.—A most abundant species during November and December in the east-coast marshes. I have seen them during this period almost daily on the stubbles in flocks numbering many thousands; occasionally also on the Humber mud-flats and along the embankment, where they pick up small fragments of chalk and sand. On the 10th of November several hundreds passed me in the middle of the Humber, crossing to the Yorkshire side, where they go to feed in the salt marshes of Holderness and on the Spurn sand-hills. On the 2nd of December, from a single twenty-two acre field of oat-stubble near the embankment, I put up certainly not less than from five to six thousand snowflakes: the air seemed to be alive with their mellow musical twitterings, and the constant flicker of so many tiny white wings relieved against the cold gray sky had a most singular and beautiful effect. When walking on the coast on the morning of the 5th of December, I saw many small flocks come to land from the direction of Spurn, flying just above the waves. In the 'Field' newspaper for December 16th, 1871, Mr. Peter Inghbald states that the stomachs of two pairs of snow buntings from the Great Cotes marshes contained almost

exclusively the seeds of *Schoberia maritima*, one of the *Chenopodiaceæ*.

Shorteared Owl.—These owls have been rather common during the autumn. I have sometimes in the evening seen them beating round the ricks in my marsh stack-yard, for mice and the sparrows roosting beneath the eaves. The good they do in this way can scarcely be exaggerated, and we take care they are never molested. Last winter an owl of this species remained in the vicinity of the farm for some months, living from the stacks. When a mouse or bird was taken it was carried to the projecting stone sill of one of the "picking holes," at the north end of the barn, overlooking the Humber, and there quietly devoured. From the number of mice heads so near this place these destructive vermin must have had a bad time of it.

Twite.—Along with the common linnets and other small birds on the stubbles are a few twites, distinguishable by their note. There are also some flocks of the hen chaffinch and mixed flocks of the greenfinch. The flock-note of the latter very closely resembles that of the common linnet, and I have frequently mistaken it for that of the latter: hence probably their well-known provincial name of "green linnet."

Redwing and Thrush.—November 13th. Redwings first observed, but some distance inland: there was a second and rather large arrival about the third week in December. On the 18th and following days I saw many hundreds together, foraging like starlings in one of the marsh pasture-fields. Early on the morning of the 8th of this month I disturbed about a score of thrushes which were nesting amongst some rough grass on the bank of a drain close to the coast, and very far from either trees or hedgerows: they were evidently new arrivals, having probably come in during the night. These all belonged to that dark northern race or variety which, as I have previously remarked in the 'Zoologist,' visit us in the autumn.*

* Since writing the above I have been reading Mr. R. Gray's most interesting and admirable notice of the 'Birds of the West of Scotland.' At page 75, article "Song Thrush," he says:—"In August and September of this year [1868] I observed numbers of thrushes in North Uist taking shelter in dry stone dykes, and hopping from one crevice to another like disconsolate wrens. I remarked particularly the unusually dark colour of their plumage, the birds being very unlike those brought up in cultivated districts, where gardens, trees and hedgerows attract this familiar songster and its allies."—*J. C.*

Wild Geese.—More numerous than has been the case for many years. I see considerable numbers occasionally in early morning or evening fly to and from their feeding-grounds. On the afternoon of the 13th, about 4.30 p.m., three skeins of geese passed over. The first lot flew in an immense V: I counted up to one hundred and twenty, and had not then got through them: the other flocks followed at half-minute intervals, and each contained about the same number of geese as the first. These geese all belonged to the same species, our common bean goose: this I know, not only from their call-note, but also from specimens I have examined. Although we occasionally meet with the short-billed goose (*Anser brachyrhynchus*), it is, I consider, anything but a common species, occurring either *singly* or *a few together*, and not in large flocks like the bean goose. I have seen this season only one white-fronted goose, which flew over at a considerable height, but was readily distinguishable by its wild *eerie* laugh or cry, like the rude "hah-ha, hah-ha, hah-ha, hah-ha, ha-a-a-a."

Fieldfare.—The fieldfare appeared in flocks inland in this county about the last week in October. The first I saw was on the 15th of November, and this was a bird with a slight sprain or injury of one carpal joint, from which it very quickly recovered. It was caught by one of my men on the sea-embankment early in the morning. There was a second and very considerable arrival in our lowlands early in December, just before the redwings and thrushes.

Golden Plover.—November 18th. During the morning large flights passed across the marsh from S.E. to N.W.; flocks also, containing several hundreds, on the same day, settled for a few hours in the pastures and stubbles. Specimens shot were large heavy birds and very fat: in size they more resembled pigeons than the usual run of golden plover. Since this day they have been very scarce, probably in consequence of the almost constant frost preventing their feeding. On the 5th of December I observed several following the ploughs, crowding into the opening furrow after the ploughman, and eagerly picking out the worms and grubs with all the boldness and familiarity of the rook and gull.

Tree Sparrow.—November 25th. Shot two from a small flock on some barley-stubble: are not nearly so numerous this winter as is generally the case.

Scaup Duck.—December 5th. About two hundred off the creek this morning. This flock was composed of males and females in about equal numbers; and, as far as I can make out with the help of the glass, were all in the mature plumage.

Redshank.—December 9th. I shot a most beautiful old male from the drain close to our railway-station this afternoon. The redshank has been rather plentiful on the flats during the autumn. One of our shooters was recently watching late at night near the Humber for ducks, and, after remaining several hours in one place without getting a shot, was preparing to leave, when his eye was attracted by a dark spot on the muds, which he thought he had not previously observed: so, more, as he said, "to get his gun off," he let drive at it, and on going to the spot, picked up, greatly to his astonishment, two fine curlews, six redshanks, six dunlins, and two knots, several wounded birds escaping into the water.

Hooper Swan.—December 12th. A flock of about twenty-three hoopers passed up the river this morning; they flew within a short distance of the New Holland jetty. Another small flock was seen on the same day.

Hooded Crow.—These crows roost in the evening in the small, boggy and almost impenetrable plantations near our beck, where on moonlit nights, when duck-shooting, I have disturbed them by hundreds. The ground under their favourite trees is strewn with their castings or pellets: these I find mainly composed of the outer skin or bran of grain, broken marine shells, and fragments of chalk-stone.

Wild Duck (Variety).—December 15th. Saw four wild ducks feeding in an oat-stubble field this morning, and, as I was on horse-back, got very near them before they rose; three were drakes; the fourth a duck almost pure white, the shoulders and wing-coverts alone of the normal colouring.

JOHN CORDEAUX.

Great Cotes, Uleeby, Lincolnshire,
December 29, 1871.

The British Skuas (Lestris).

By E. H. RODD, Esq., and the late W. YARRELL, Esq.

THERE appears to be some little obscurity as to the number of British species constituting this family: the subject has occupied my attention more or less from 1840 to the present time, and I am not clear now as to whether there may not be a species between the smallest, No. 4, which I take to be *Lestris Buffoni*, and No. 3, which is *L. Richardsonii*; the great or common skua and the pomarine skua forming Nos. 1 and 2.

I have in my cabinet Nos. 1, 2, 3 and 4. No. 4, which I obtained, in 1833, from a parish adjoining the Land's End, appeared to me to be the true arctic or Buffon's skua, from the two slender and very lengthened middle tail-feathers extending about *seven inches* beyond the lateral tail-feathers, but which, although much narrower than the shorter corresponding feathers of *L. Richardsonii*, are decidedly *graduated* from the base to their tips, and not of equal width. This specimen is only half the size of an adult *Richardsonii* which I have, the projecting tail-feathers of which are only from two to three inches long.

I submitted this smaller bird of mine, by a drawing, to our friend the late Mr. Yarrell, and I am pretty sure that his letter to me in answer will be read with interest, as it seems to raise a new question as to a fifth British species. You will observe that he asserts that the graduated character of the middle feathers of the tail forbids its ranking with the *L. Buffoni*, which he says are of *uniform width* throughout from their projection to the tips. If he is right (which nevertheless I very much doubt myself), there must be a fifth British species, for my specimen is certainly only one half the size of the *Richardsonii* and about the bulk of a common shearwater, and the middle tail-feathers are graduated in width to the end; but Mr. Yarrell pronounced it to be *L. Richardsonii*, as will appear in his interesting and pleasantly written letter, which is subjoined. He appears to write in a very confident tone as to the characters referred to in the middle tail-feathers being specific marks of distinction.

EDWARD HEARLE RODD.

Penzance, January 9, 1872.

Ryder Street, St. James's,
April 25th, 1840.

DEAR SIR,

Having now a vacant half-hour, I devote it to answering your letter, received on the 20th inst., on the subject of the British species of the genus *Lestris*. Of these we have four: No. 1, the largest (the skua), too well known to require further remark; No. 2 (*L. pomerinus*), next in size. This is a rare bird in its adult state, when in colour it resembles the drawing you sent me; in its first autumn it is of the same colour as Bewick's black-toed gull. Mr. Eyton, in his 'Rarer British Birds,' at page 53, has figured the *pomerinus* in change—to the light-coloured plumage; when adult, the two tail-feathers are elongated, but not to the extent found in the smaller-sized species.

The confusion that has arisen between the next two species has been occasioned by applying the trivial term "parasiticus" to both, and that, too, by four or five different authors in both cases. The word "parasiticus" ought not to have been applied to either of the species, and when applied ought not to have gained any sanction by being used by others. The word refers to a habit that is common to all the species, in fact generic, and therefore improperly applied to a species, because it does not define—which is, or ought to be, the very object of a name.

No. 3 is the *Lestris Richardsonii* of Swainson; but this bird is also the *parasiticus* of Retz, Faber, Bewick, Selby, Fleming and Temminck. The bird figured by Bewick is three years old; your bird is of this species, but still older. Bewick's black-toed gull, which he calls *cupidatus*, is a young bird in its first year: this bird afterwards becomes of one uniform dusky slaty brown, and still later acquires the buffy white colour on the sides of the neck and on the under surface of the body; the two tail-feathers elongate with age, but the webs on each side the shaft are always lanceolate, *i.e.* broad at the base, tapering gradually to the tips. This is the most common of the British species.

No. 4. *Lestris Buffonii* of Boie.—This species has been called *parasiticus* by Gmelin, Pallas and Gould. This bird has also been called the arctic; but this is objectionable, because this species does not go further north than No. 3, but it is much more rare. This bird is smaller in size than No. 3. I have never seen it but in its adult state, and it then has longer tail-feathers than

No. 3, with this remarkable difference, that the webs are not more than one-fourth of an inch wide, each of them, and are moreover of equal breadth throughout the whole length of the feathers—I mean, of course, of the two central long feathers. It is remarkable that there is not a very great difference in length between the skua and the Buffonii, for what each of the species (including Nos. 2 and 3) want in bulk of body is made up by the greater elongation of the two tail-feathers when the birds are adult. It is also remarkable that the skua has never been known to assume any portion of the light colour so conspicuous after the second year in pomerinus, Richardsonii and Buffonii. A skua that lived ten years in confinement remained during the whole time of the same uniform brown colour. If I should not have met all your wishes about the species of Lestris let me hear from you again.

I am,

Yours very truly,

E. H. Rodd, Esq.

WM. YARRELL.

Notices of New Books.

The Ornithology of Shakespeare critically Examined, Explained and Illustrated. By JAMES EDMUND HARTING, F.L.S., F.Z.S., &c. London: Van Voorst. 1871.

READERS of the 'Zoologist' may remember a very interesting series of papers on the 'Ornithology of Shakespeare' which were contributed to it in the volumes for 1866 and 1867, by Mr. J. E. Harting. The work which we have now the pleasure of noticing is not merely a reprint of these, but contains so much additional matter that it numbers (as Mr. Harting states in his preface) 300 pages, against the 80 which appeared originally in the 'Zoologist.' And besides this large increase of matter, all that had been previously written has been carefully re-arranged and blended with the new material, which has been collected by patient research. The result is a book which is interesting not only to the ornithologist but also to the general reader, and which is moreover extremely attractive from the numerous head-pieces and vignettes with which it is illustrated: the drawings for these have been furnished by the pencil of Mr. J. G. Keulemans. We may mention a head-piece at

page 235 representing some wild-fowl alighting on water, in which the swoop of the birds in settling, a difficult subject for the artist, is drawn in a way which is very true to life; and at page 270 there is a vignette of a blackheaded gull hovering over the waves on the search for food, which strikes us as very happily done. And while we are describing the embellishments of the book we must not forget to add that the frontispiece is an engraving of the Chandos portrait of the great poet; to which, with the able assistance of Mr. Wolf, Mr. Harting has ventured to make an addition. For the purpose of connecting Shakespeare with that branch of his almost universal information to which Mr. Harting has directed his attention in the pages we are reviewing, a hooded falcon is drawn sitting upon the poet's wrist and held as a falconer would hold it, by the leash passed through the hand. We consider this a very suitable addition to the portrait, and one which is doubtless characteristic, for Shakespeare, whose writings abound with references to falconry, must often have carried hawk on glove.

It is in explaining the technical language of an almost forgotten sport that Mr. Harting is singularly happy, and the manner in which he has done this makes his work of great assistance to all readers of Shakespeare's plays. Mr. Harting well says that the meaning of many beautiful passages would be lost if one were ignorant of the metaphors contained in them, which are taken from the science of the falconer. He gives as an example the words in which Othello expresses his fears about the fidelity of Desdemona:—

“ If I do prove her *haggard*,
Though that her *jesses* were my dear heart-strings,
I'd whistle her off, and let her down the wind
To prey at fortune.”

In these lines all the words in italics are taken from falconry, and no one would understand their sense who had not some knowledge of the terms employed. But if these are familiar, the beauty and pathos of Othello's exclamation become apparent. A “haggard” was a wild-caught hawk, difficult and almost impossible to train. The “jesses” were the light leather straps passed round the legs of the hawk, by which she was attached to the leash. To “whistle off” was a phrase which denoted the dismissal of a falcon which was turned adrift as no longer worth the keeping. To “let down the wind” meant to turn her off anyhow, without regard to

a quarry, for when flown at game the flight was against the wind; and to "prey at fortune" signified to leave her to shift for herself, without the assistance of beaters and spaniels to flush the game for her to swoop at. Thus explained the passage is expressive of the ignominious dismissal of one who has hitherto been a dear favourite, but it would be hard for anyone to gather this meaning from it who knew nothing about falconry.

Mr. Harting has very well made out his case that Shakespeare was a close observer of nature and a thorough sportsman. An ornithologist of the present time would have been glad to have found passages in his writings which would have shown how common some birds were when he wrote, which are now no longer to be met with in this country. But Shakespeare's knowledge of England seems to have been pretty well restricted to the central counties and to the metropolitan district. He could hardly have visited the great fen country, then undrained and at times one continuous sea, without having been struck by the clouds of waterfowl he would have seen. Nor could he often have crossed the downs, which in those days must have been tenanted by numerous bustards, without having noticed these fine birds, and if ever there existed such a sport as hunting them down with grayhounds, we feel certain that had he witnessed it we should have encountered some allusions in his writings. It would have brought more clearly to our eyes the Avifauna of the England of Shakespeare, if the crane and the bustard had been mentioned by him: but if we are, by our ornithological sentiments impelled to express such a regret as this, we may yet, from what the great poet has described, picture scenes of bird-life which are very different to what we meet with now. In Shakespeare's times, we have it from his own words, the circling kite must have been a conspicuous object in every landscape; and hawking parties as frequently to be observed in rural districts as sportsmen, with gun in hand and the due following of keepers and dogs are now to be seen in the shooting season. We easily gather from Shakespeare's writings that falconry was *the* sport *par excellence* of England at his time: probably the science had even then passed its zenith, and was already on the wane, before the recent introduction of fowling-pieces and the growing spirit for enclosing wash-lands; yet it was still the characteristic relaxation of the high-born and wealthy, and was almost the only field-sport which our ancestors possessed. Mr. Harting, by a full

description of all the appliances for the sport which are mentioned by Shakespeare, and by an interesting account of the price paid in his day for hawks, has given us a good idea of the estimation in which falconry was then held, especially by royal personages. He also furnishes us with a list of the various contrivances anciently used by fowlers. When percussion-caps and breech-loaders were not, the tables of the wealthy had to be supplied with game through the aids of snares, springes, nets, &c., and the capture of game in what we should now consider a poaching fashion must in those times have been a great art. There are abundant references in the plays and writings of Shakespeare to all these engines, which teach us how generally they were used.

We should naturally expect in the writings of a poet that the birds of song, which have always been dear to the Muse, would be often introduced. The nightingale, the lark, and other songsters have the honour of mention in the works of Shakespeare, some of whose most exquisite lyrics they have inspired. Mr. Harting has gone at length into the old beliefs about the song-birds, especially with reference to the nightingale. Shakespeare was well acquainted with the legends of the old mythologies, and alludes to them continually. He generally calls the nightingale Philomel. It was a poetic theory that the nightingale sang only by night, and then in a wood with her breast pressed against a thorn. It is not quite clear what was the origin of this last superstition. Some have found an explanation of it in the brambly copses in which the nightingale nests and roosts; and the Rev. A. C. Smith, in the 'Zoologist' for 1862 (Zool. 8029) has actually related the occurrence "on two occasions of a strong thorn projecting upwards in the centre of the nightingale's nest." But this can be regarded as no more than an undesigned misfortune to the comfort of the tiny architect, and as in no way connected with the old idea that the nightingale practised penance by self-impalation. Mr. Harting correctly says that the nightingale sings as often by day as by night. The poet who spoke of

"The nightingale that all day long
Did cheer the village by her song,"

was better informed about the habits of our chief song-bird than the majority of his brother bards. As far as our own experience goes, the nightingale is capricious in the times and places she

selects for singing. We have heard her in a dusty hedgerow by a turnpike-road in the full blaze of a mid-day sun. Some tame nightingales we long kept in confinement used to begin to sing at the early dawn of a summer's morning, and would generally remain mute during the day; but if one commenced to sing the emulation of the others would be provoked and a full concert excited. In the winter time these birds would often sing of an evening directly the lamps were lit in the dining-room, where they were kept.

There are many quaint legends and beliefs about birds which, hinted at by Shakespeare, are treated of and explained in Mr. Harting's pages; not the least being the familiar one of the pelican feeding its young with blood flowing from self-inflicted wounds upon its breast. It is thought that the ground-work for this old fable may be traced to a peculiarity which has been noticed in the flamingo, which has the power of secreting a blood-coloured fluid in its crop, with which it feeds its young in their callow state. We are also shown that "pigeon's milk" (which we used to make a bye-word when schoolboys) is not altogether a myth. Most of the quaint old stories about animals and birds have some foundation, and it does not do to be content to dismiss them with ridicule. In attempting to investigate them, we shall be often rewarded by the rediscovery of interesting facts.

M.A.M.

[Both Mr. Harting and my kind correspondent who writes this review seem to have missed the correct interpretation of the expression "russet-paté choughs." Mr. Harting "urges the claim of the jackdaw to be the bird so distinguished. Now, as he truly says, the daw has a gray head, and to make Shakespeare term gray russet is in our eyes a crime. Without doubt the poet had in his mind the real Cornish chough, and the expression is quite accurate. 'Russet-paté' is having red pattes or feet (the heraldic *croix patée*), not a red pate or head—a feature equally inapplicable to chough or daw, while the red feet of the former are as diagnostic as can be."—'Nature,' December 28th. Thanks, 'Nature,' for this, which is unquestionably the true explanation.—*E. Newman.*]

Rare Birds in Nottinghamshire.—Some very rare birds have been shot in Nottinghamshire during the past year, among which I may mention the following:—

Roughlegged Buzzard.—A fine roughlegged buzzard was caught near Newark the last week in December. It was in a hedge, fast by the wing.

It was in very good plumage: it has since been sent to the Zoological Gardens.

Virginian Colin.—A Virginian colin was shown to me by a birdstuffer in Nottingham two or three days ago, which was killed by a gentleman when partridge shooting, in November, close to Nottingham. It was in good plumage, and has been pretty well set up, though it had been kept too long before sent. It is, to all appearance, a wild bird, and every feather in its tail is perfect. None of this kind of bird has been turned up in this county, to my knowledge. I have bought the bird, and it is now in my collection. Montagu mentions one as having been killed near Mansfield.

Bittern.—A fine bittern (*Botaurus stellaris*) was shot by the gamekeeper of Mr. Samuel Watson, on the 12th of December, on the banks of the Trent, opposite to Clifton Hall. It is some years since a bittern has been killed so near Nottingham.

Variety of the Waterhen.—A very beautiful variety of the waterhen was shot by the same man who killed the bittern. It had white spots all over it, which were thicker and larger towards the tail. I think it is very seldom we meet with varieties in the Gallinule tribe.—*J. Whitaker, jun.; Ramsdale House, near Nottingham.*

Rare Birds at Plymouth.—During the past month (October) the following birds have come under my notice in the neighbourhood of Plymouth;—One gray phalarope, one young pomarine skua, several common and arctic terns, one young eared grebe, a young redthroated diver, and a fine old northern diver in nearly full summer plumage: this last was on the 30th of October, rather early for the appearance of this species in the Plymouth Sound. On passing the River Exe, on my way to London, on the 4th of November, I observed some large flocks of brent geese.—*John Gatcombe; Stonehouse, Plymouth, November 9, 1871.*

Buzzard, Peregrine Falcon and Merlin at Cobham.—We have had one or two buzzards here this winter, and they still remain (January 10th), but not more than three at the most—nothing like the large flight of twelve or fifteen that visited us last year. I have myself seen one on three occasions, and one of these was being pursued and teased by a very small hawk, which, though a long way off, I am nearly sure was a merlin, as it was too short in the tail for a male kestrel. I also saw a peregrine about the 31st of December: it was flying straight along, as if migrating. I saw a gray wagtail yesterday, a great rarity at this season: hitherto I had only seen them in September.—*Clifton; Cobham Hall, near Gravesend, January 6, 1872.*

Missel Thrush and White's Thrush.—With reference to the remark in the last number of the 'Zoologist' (S. S. 2912) as to the possibility of mistaking an immature missel thrush for White's thrush, I am desirous of calling attention to an easy mode of distinguishing the two species when

shot. The true White's thrush (*Turdus varius* of Pallas) has fourteen tail-feathers, whereas the missel thrush has but twelve.—*J. H. Gurney; Marlton, Totnes, January 8, 1872.*

White's Thrush.—I see, in an editorial remark to Mr. Gurney's note on White's thrush, in your January number (Zool. S. S. 2912), you discredit the reports of the occurrences of this bird, on the authority of a correspondent whose name you do not mention. As two of these occurrences were recorded by me, perhaps you will allow me to say a few words on the subject: the first, recorded in the 'Zoologist' for 1870, as having been killed near Taunton by Mr. Beadon, was brought to me *in the flesh* by Mr. Beadon himself on the 7th of January, a time of year at which the missel thrush has lost the early plumage, in which alone it could by any possibility be confounded with White's thrush; moreover, besides myself and our Vicar, the Rev. M. A. Mathew (who both feel ourselves perfectly competent to distinguish a White's thrush from a missel thrush), several of your best known correspondents have seen this bird—both the Mr. Gurneys, Mr. Harting and Mr. Gatcombe: we could scarcely all six have passed a young missel thrush as a White's thrush. As for the other, recorded by me in the 'Zoologist' for 1871, I did not see it in the flesh, but when I did see it I looked carefully at it before I recorded it, as I wished to convince myself that it was not set up from a foreign skin; but I now entertain no doubt on that subject, not only from the appearance of the bird itself, but also from other evidence I have been able to collect concerning it. Both Mr. Mathew and Mr. Bidgood, the curator of the Museum at Taunton, a good practical birdstuffer, who saw it at the time that I did, quite agree with me that the bird was set up from a freshly-killed specimen. This bird was subsequently sold to Mr. Bine, of Bishop's Hall, in whose collection Mr. Gatcombe saw it, and was so pleased with it that he took it to London to show to his ornithological friends there, who would undoubtedly have discovered the mistake had there been one. I am perfectly aware that in your 'Montagu's Dictionary' you say that this bird has no claim to a place in the British list, but since that time several occurrences in various parts of the British Isles have been recorded in the 'Zoologist': one of them, quoted from the 'Field,' is probably doubtful, as the bird was not obtained; but of the others there can, it seems, be no reasonable doubt. This increase in the number of occurrences would seem to show either that up to that time the bird must have been overlooked, which is by no means improbable (my bird would have been given to the ferrets the next day had I not happened to meet Mr. Beadon out hunting), or that the species is extending its geographical range to the westward, as the missel thrush is said to be doing to the northward in Scotland, in which case it would be interesting to know if more frequent occurrences than hitherto have been observed in other parts of Europe within the last few years.—*Cecil Smith.*

White's Thrush.—Mr. Gurney calls attention to the circumstance of two specimens, or supposed specimens, of White's thrush occurring on successive days last year, one of which was recorded by myself. An additional coincidence may be noticed in the fact that Mr. R. F. Tomes, as mentioned by Mr. Gould, met with a White's thrush, a year or two back, on the 6th of January, one of the very days in question. With regard to the editorial remark about the similarity of young missel thrushes to this bird, I would observe that it was not any peculiarity of plumage that attracted my attention to this bird, but rather the singular resemblance to a woodcock which it presented on the wing—a peculiarity of this bird which has twice been noticed in the 'Zoologist.' The habits of this bird were altogether distinct from those of the missel thrush.—*Clifton.*

Ring Ouzel at Epping.—There has been a ring ouzel about the garden for a week [1st to 8th of November, 1871]: it comes to feed on the haws upon one of the red thorns at the bottom of the garden, and also upon the yew berries. When I was in the garden this morning it came into the tree three or four times when I was within ten yards of it.—*Henry Doubleday, in a letter to E. Newman.*

Golden Orioles in Confinement.—I think it may be of interest to some of the readers of the 'Zoologist' to know, especially as so distinguished an ornithologist as Mr. J. H. Gurney does not seem to be aware of the fact, (see 'Zoologist,' S. S. p. 2681) that the golden oriole (*Oriolus galbula*) is not unfrequently kept as a cage bird in Austria, where it is a regular, and in some parts numerous, summer visitor. I myself have seen several birds of this species in confinement, and learnt, on good authority, that these birds have been kept alive as captives for several years. Last summer, whilst staying at Vienna, I saw at a friend's house three young hardly-fledged orioles, which he had, only a few days previous to my seeing them, taken with their nest, and had placed them in a good sized wicker-work cage. He fed them with bread and milk mixed with (the so-called) ants' eggs, of which they seemed very fond. They were remarkably tame, considering their short imprisonment and great shyness on being first taken. I have since heard from the gentleman to whom the young birds belonged that they are still in perfect health, and have turned out very strong and fine birds. The golden oriole seems to be one of those birds which yearly resort to the same place for the purpose of nidification (a fact I believe not generally known), several instances having come to my notice, when living in Austria, of these birds frequenting, year after year, the same spot for rearing their young. The tree from which the above-mentioned nest was taken is one of their favourite places, a pair of birds having built their nest in it for more than ten successive years. This tree is a tall elm situated in the College Park of Kalsburg, which is in the immediate vicinity of Vienna, and the nest, which is mostly a well-built shallow structure and composed of stalks, roots, grass, straw and wool (the finer particles of these, and

occasionally a little moss and a few feathers forming the lining), is *suspended* to the forked extremity of one of its higher branches, where it is well concealed by the foliage. Some sort of grass or straw is most frequently used for suspending the nest to the branch, which is done by wreathing or twining these substances round it, and then fastening or interweaving the margin of the nest in or to the thus prepared branch, so that the nest, when completed, is *not*, as is done by most other birds, fastened to its support by the *bottom* or *side*, but only by the rim; but in one of the nests I have seen the bird had almost entirely used cord for doing so. These birds must have great liking for bright colours, or else I cannot explain the reason why they should weave into their nests bright-coloured bits of cloth, paper, ribbon, &c., &c., which materials I have constantly found in more or less profusion in nests I have examined of this bird. The eggs vary from three to five in number, although I believe that as many as six have been found in one nest. They are white, speckled more or less with spots of black, dark brown or claret, which are generally more numerous at the thick end. The size of these spots varies greatly in different specimens, as also their number. Eggs of a pure white have occurred, but are very unusual.—*A. von Hügel; Stonyhurst, near Blackburn, November 21, 1871.*

Curious Habit of the Longtailed Titmouse.—A gamekeeper once told me of a curious fact he had observed in connection with the longtailed tit: he declared that he had often seen this pretty little bird roosting in clusters in the woods, one bird hanging on to the other just like a swarm of bees. I have never come across any notice of this habit in this tit, if indeed it really practises it, and should be glad to hear if any of the readers of the 'Zoologist' can confirm, from personal observation, this statement of the keeper.—*Murray A. Mathew.*

Whiteheaded Longtailed Tit in Somersetshire.—When driving near Bridgwater in October last I observed a small flock of longtailed tits, amongst which was one with a white head, and which I have no doubt was the variety often found on the Continent, but so rarely in Britain, named *Acredula caudata*.—*John Gatcombe.*

Variety of the Rock Pipit.—Mr. Shopland, naturalist, of Torquay, informs me that a nearly white rock pipit was shot at Paignton on the 2nd of October last.—*J. H. Gurney.*

American Cuckoo in Ireland.—An American cuckoo was stuffed by my stuffer in Belfast last November or October: it was shot in Ireland. I am writing to him for particulars: the bird has gone home, so I probably shall not see it. It was described to me as like a large whitethroat, and smaller than the common cuckoo. I sent a skin of the yellowbilled cuckoo for comparison, with which it agreed, but was not so yellow on bill, nor had it so much white on tail, probably being a young bird, my skin being adult.—*H. Blake-Knox; Dalkey, January 5, 1872.*

Cuckoo near the Sea.—Your correspondent, Mr. H. R. Leach, seems surprised at hearing the notes of a cuckoo close to the sea. Here we seldom hear them anywhere else: the cliffs are the parts they mostly frequent. September is late for them.—*C. B. Carey; Candie, Guernsey, December 14, 1871.*

A Domestic Hen living Twenty-four Days without Food.—A common hen belonging to a warehouse-keeper in Liverpool disappeared on the 11th of December last, and though search was made for her could not be found. On removing some cotton to-day she was found to have wandered between two bales, and got jammed in such a position that she could neither advance nor retreat. The poor bird was, of course, thoroughly emaciated, but alive, and had actually plucked the feathers and drawn blood from her breast for nourishment in the agony of starvation. Though extremely weak from being without food for more than three weeks, there seems now a good chance of her recovery.—*H. Durnford; 1, Stanley Road, Waterloo, Liverpool, January 5, 1872.*

Redlegged Partridge nesting in a Tree.—Some instances of abnormal nidification in the redlegged partridge have been lately mentioned in the 'Zoologist.' Last June (as I am informed by the keeper) a pair rested in the crown of an oak tree near this house, at a height of about twelve feet from the ground. Their nest had to be destroyed, as they, unfortunately, took to killing some young pheasants at a coop which was placed near.—*J. H. Gurney, jun.; Northrepps, Norwich.*

French Partridge perching.—A friend of mine when out covert-shooting in the month of November last, at Chippenham, in Cambridgeshire, shot a bird perching in a spruce fir, about twenty feet from the ground. It was seen by several members of the party to alight in the tree, but owing to the density of the covert was supposed to be a pheasant. Though repeatedly thrown at with sticks and stones, it refused to move. On picking it up it proved to be a French partridge.—*Arthur W. Crichton; Oxford and Cambridge Club, Pall Mall, S.W., January 8, 1872.*

Collared Pratincole near Gosport.—As instances of the collared pratincole occurring in Great Britain are extremely rare, I venture to record the capture of one, which, though happening some few years back, may prove of interest to your readers. A brother officer of mine, Lieut. Telfer, informs me that in the month of October, 1864, he was strolling along the beach of Stokes Bay, near Gosport, when he saw a bird fluttering along the margin of the shore, evidently maimed or very weary, as it was unable to fly but a few yards at a time. Not having a gun with him, he pursued it, throwing shingle at the bird, finally knocking it over, when it proved to be a fine example of *Glareola pratincola*. Mr. Telfer took the bird home and preserved it, but the skin is no longer in his possession: having shortly after gone abroad to join his regiment he lost sight of the specimen, and now he

can find no trace of it. Mr. Telfer could have made no mistake in the species, for, besides being a fair ornithologist, he had just returned, in 1864, to England from Corfu, where the pratincole is abundant, and where he had procured and skinned many of these birds.—*H. W. Feilden; Aldershot, November 25, 1871.*

Scent of Wood Sandpiper.—I have not observed that attention has been drawn to the circumstance that the wood sandpiper has a peculiar musky smell, similar to that possessed by the green sandpiper. In the specimen of the former species, which I obtained at Branton Burrows, as recorded in the November number of the 'Zoologist,' this odour is very apparent, and is as strong as I have noticed in any specimen of the green sandpiper that has come under my notice.—*Marcus S. C. Rickards; 37, Cornwallis Crescent, Clifton, December 16, 1871.*

Greenshanks, &c., near Newton.—I noticed a great many birds yesterday on the banks of the Teign. Shortly after leaving Newton, in a sandy ditch within half a gun shot of the railway, a pair of greenshanks were rapidly running to and fro in the shallow water, on the look-out for food. They hardly took any notice of the train as it passed, one merely flying across the pool, where it pitched and commenced to feed as eagerly as before. I suspect they had but just arrived from the north. Cormorants were very numerous. I have travelled between Newton and Teignmouth scores of times, but never saw so many as I did on this occasion. On one small spit of sand, which was not quite covered by the tide, there were no less than seven sitting upright with outstretched wings, and we passed at least fifty more before we reached Teignmouth. The wind was fresh from the south-east, with a short lopping sea on outside the mouth of the harbour, and this may have driven the birds into the river. Most of them, by their size and plumage, were apparently birds of the year. Besides these, herring and blackheaded gulls were plentiful, but the tide being nearly high, there was no mud or sand uncovered for the smaller shore birds, and the only species I observed was the common sandpiper, three of which flew off some stones close to the railway-bank as the train went by. Near Starcross gulls were again numerous, and I believe I saw another pair of greenshanks, but they were too far off to make out with certainty.—*Gervase F. Mathew; September 27, 1871.*

Spotted Crake near Clifton.—On the 27th of October, a birdstuffer here showed me (in the flesh) a specimen of the spotted crake, which had been picked up on the Bristol and Exeter Railway, near this city, a day or two previously, and which, from a large scalp wound on the top of its head, had evidently met its death by flying, no doubt (and probably in the course of its autumnal migration) in the night time against the telegraph wires. On the 30th of October I shot a purple sandpiper, in full winter plumage, on the banks of the Severn, near the New Passage. It was alone at the time,

although in the near neighbourhood of a large flock of dunlins and ringed plover. On only one occasion before have I found this species on this river or the moor, and that was some years ago, in the month of March, when I came across a pair close by the place from whence I obtained the present specimen.—*Marcus S. C. Richards; November 18, 1871.*

Spotted Crake near Nottingham.—A beautiful specimen of the spotted crake (female) was caught by some farm lads when going to work at Colwick, near Nottingham: it ran past the gate which they were going through; they ran it down to the Trent, which flows near, where it took to the water and swam out, but landed again on the same side, and was caught by them. I have seen three large flocks of wild geese, but too high to tell of what species; they were flying from north to south. I saw fifteen hooded crows on the 15th of October; a woodcock on the 19th; field-fares and golden plovers on the 2nd of November.—*J. Whitaker, jun.*

Great Auk.—I have just been reading a book entitled 'The Land of Desolation, being a Personal Narrative of Adventure in Greenland, by Isaac J. Hayes, M.D.' (London, 1871). This American *savant* has had much experience in Arctic travel, and the book in question is a record of a visit to Greenland made in the summer of 1869. At p. 291 the following passage occurs:—"I found Mr. Hansen to be an enthusiastic naturalist. Among other valuable specimens which I owed to his kindness was a large collection of birds' eggs and skins, and some fossils. To the study of the birds of the region and their habits he has devoted much attention. The great auk, long since supposed to be entirely extinct, he told me had been recently seen on one of the Whale-fish Islands. Two years before one had been actually captured by a native, who, being very hungry, and wholly ignorant of the great value of the prize he had secured, proceeded at once to eat it, much to the disgust of Mr. Hansen, who did not learn of it until too late to come to the rescue. How little the poor savage thought of the great fortune he had just missed by hastily indulging his appetite!" Anything relating to the continued existence of the great auk is so interesting that I send you this extract, for what it may be worth. Mr. Frederick Hansen was, at the time of Dr. Hayes's visit in 1869, the Governor of Godhavn, in Disco Island (lat. 69°), and had previously been Governor of Proven and Upernavik. Dr. Hayes gives a wood-cut of "The Great Auk," but he does not tell us who sat for the portrait.—*J. W. Dunning; 24, Old Buildings, Lincoln's Inn, January 10, 1872.*

Pomarine Skuas in Torbay.—I have just seen, at Mr. Shopland's, in Torquay, two pomarine skuas, shot in Torbay on the 26th of October last. One is a fully adult bird; the other a bird in the second year's plumage, but with some very slight remains of the first year's dress on the lower part of the back: this specimen has the feathers at the back of the neck broadly margined with dull white. Mr. Shopland informs me that two other

specimens of this skua, in the first year's plumage, were shot on the same day by the same gentleman who obtained the two older specimens above referred to.—*J. H. Gurney.*

Spotted Gunnel and Lesser Forked-beard near Penzance.—A spotted gunnel (*Blennius gunnellus*), or butter-fish, has been taken here with ten spots, the eighth faint in colour, but perfectly definite. I have also received the lesser forked-beard, the first specimen I have seen for several years.—*Thomas Cornish; Penzance, January 17, 1872.*

Supposed Hermaphrodite Fish.—The possibility of the occurrence of hermaphrodites among Vertebrata is a subject of such moment that my interest was greatly excited by the receipt of the specimens alluded to in the accompanying note, and handed to me by the editor for examination:—

“East Borough, Wimborne, Dorset, October 27.

“Sir,—The inclosed was taken from the abdomen of as pretty a 4½-lb. jack as you ever saw. Is there not something strange about it? If I am right, I take it to be a milt and roe in the same fish. If I am wrong, and there is nothing very uncommon about it, I beg you will excuse my ignorance and my troubling you.—*G. HARVEY.*”

The appearance of the specimens was precisely that of a partially-developed milt and roe. The ova in the latter were about the size of the heads of small pins, and were perfectly healthy, although, as might be expected, undeveloped, the pike not generally spawning until March and April. The second body, about seven inches in length, appeared so obviously a milt or soft roe, that no one could on a cursory inspection have the slightest doubt respecting it; and I congratulated myself on possessing a specimen of the highest possible interest. To those of my readers who are microscopical observers I need not dilate on the wonderfully acute detective powers of the microscope, which reveals secrets concealed from the most accurate unaided vision, and shows us the true nature of the object under examination. The structure of the minute vibratile cells which make up the substance of the milt of a male fish is so marked that there is no possibility of mistaking it for any other organization. The removing of a minute portion of this milt on to a glass slide, the addition of a drop of water, and the bringing a one-fifth object glass to bear on it, revealed the fact that it was composed of adipose tissue, without the slightest sign of a vibratile cell. Hence there was but one conclusion, namely, that this object, which appeared so like a milt as to deceive the most attentive observer, was nothing more in reality than a roe which, from some cause or other, had become diseased, and had undergone what is known as “fatty degeneration.” This case is particularly interesting, as illustrating the value of the microscope in Natural-History

researches. Had these specimens not been examined microscopically they would doubtless have been held to establish the fact of hermaphroditism having occurred in fish.—*W. B. Tegetmeier, in the 'Field.'*

Birth and Death of a young Hippopotamus at the Zoological Gardens.—

On Tuesday morning last Mr. Bartlett was kind enough to inform me that a little hippopotamus had been born. Of course I went to the Gardens at once. On looking through the window of the house where the hippopotamus keeper resides, we could easily see the mother and baby. The mother lay in the corner furthest away from the window; the young one lay close to her; the nose of the mother was close to the nose of the infant. Everything was painfully quiet, and the only sound was the chirping of the sparrows: the sparrows seemed to chirp louder in the hippopotamus-house than anywhere else. I understand there was no difficulty about the birth, and that the mother did not sweat blood, as on the previous occasion. The little animal, as Mr. Bartlett informed me, had not been seen to suck, although the mother had plenty of milk. An attempt had been made to get the little thing away directly it was born, but the mother was so savage that it was thought best by Dr. Selater and Mr. Bartlett to leave matters alone. As far as I could make out, through an opera glass, the little one is as near as possible the same size as its brother, which was born February 21st, 1871, and died in three days. It seems surprisingly strange that the instinct of the mother was not sufficient to induce the young one to suck, and it seems almost contrary to the rule of Nature that the young one did not know where to seek its food. Both mother and child had been in the water, and the young one could swim as well as its mother. Two milch goats had been provided in case they could have got the young one away from its mother. The real fact is we do not know what the real habits of the Hippopotami may be when they bring forth their young in the state of nature, and this shows the value of the doctrine I have always preached,—namely, how much more interesting and important it is for the sake of zoological science that travellers should continually shoot, shoot, shoot. Now if some of our African travellers,—and surely there are plenty of gentlemen now in London who have been in countries where Hippopotami abound,—who would have taken the trouble to inquire of the natives, or observe themselves, how the young Hippopotami are managed by their mother, they might have been able to have afforded Dr. Selater and Mr. Bartlett such valuable information as would have enabled them to have preserved the life of such a little animal so valuable to the Society. On Thursday morning I went up again, and found, alas! that the little Umzimvooboo (as the Africans call the hippopotamus) had died at six o'clock on Wednesday night, at the age of eighty-four hours. It was in the dissecting-room, and an artist was making a

drawing of it for the 'Illustrated London News.' Its total length from tip of nose to end of tail was three feet nine inches; the head ten inches long; the tail five and a half inches. The skin is very much corrugated, and seems covered with a glass-like varnish. It is very pink about the mouth and lower jaws. The hoofs are dark chocolate; the legs and lower portion of the body the colour of the section of a piece of India rubber. Mr. Bartlett, with his usual energy and perseverance, managed to get the young one away from its mother, and it sucked down a pint and a half of goat's milk before it died. They managed to drive the mother into her tank of water by squirting water into her face with a powerful garden-engine. The moment she entered the bath they slammed the gate, and then stole the young one. I understand that this rare specimen of a sucking Behemoth is to be sent to Oxford for dissection.—*Frank Buckland, in 'Land and Water,' Jan. 13.*

Proceedings of the Entomological Society.

December 4, 1871.—A. R. WALLACE, Esq., F.Z.S., President, in the chair.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—‘*Annales de la Société Entomologique de France*,’ 4e Série, tome x. and Supplement; presented by the Society. ‘*Bullettino della Società Entomologica Italiana*,’ anno iii., trim. 1 & 2; by the Society. ‘*Mittheilungen der Schweizerischen Entomologischen Gesellschaft*,’ vol. iii. No. 8; by the Society. ‘*L’Abeille*,’ tome vii., livr. 4, 5, 6 & 7; tome viii., livr. 8, 9; by the Editor. ‘*The Canadian Entomologist*,’ vol. iii., Nos. 7 & 8; by the Editor. ‘*Additamenta et Emendationes ad Catalogum methodicum et synonymicum Hemipterorum Italiae indigenarum*,’ auctore Antonio Garbiglietti, M.D.; by the Author. ‘*Description de deux Dorcadion nouveaux et observations sur quelques autres espèces du même genre*,’ par M. A. Chevrolat; by the Author. ‘*Beiträge zur Parthenogenesis der Arthropoden*,’ von C. T. E. v. Siebold; by the Author. ‘*The Zoologist*’ for December; by the Editor. ‘*The Entomologist’s Monthly Magazine*’ for December; by the Editors.

By purchase:—‘*A History of the Spiders of Great Britain and Ireland*,’ by John Blackwall, F.L.S. Parts I. and II.

Exhibitions, &c.

Mr. S. Stevens exhibited, on behalf of Mr. Shearwood, an extraordinarily dark variety of *Argynnis Aglaia*, captured near Teignmouth.

Mr. Bond exhibited, on behalf of Mr. Doubleday, varieties or malformations of British Lepidoptera, as follows:—(1) *Melitæa Artemis*, with the

antennæ scarcely more than half the usual length; (2) *Pieris rapæ*, female, with only a faint trace of the second spot on the upper wing; (3) *Anchocelis lunosa*, male, taken at sugar, the right-hand upper wing much broader than the other, and differently formed; (4) *Cheimatobia brumata*, naturally with only three wings, and varying in colour and markings.

Mr. E. W. Janson exhibited a collection of insects, principally Coleoptera, from the diamond-fields of South Africa.

Mr. Higgins exhibited examples of *Tetracha crucigera* of M^r Leay, sent to him from Sydney, being, as he believed, the first seen in Europe.

Prof. Westwood exhibited a series of drawings and specimens, with the view of identifying *Papilio Thersander* of Fabricius, and of proving that the figures thereof published by Donovan in the 'Naturalists' Repository,' although stated to have been copied from Mr. Jones's 'Icones,' were drawn by Donovan from a torn and mutilated copy of Jones's figure, and completed from *Charaxes Fabius*.

Mr. Albert Müller read the following notes:—

"In reference to the question whether *Libellulidæ* are liable to be persecuted by birds, I wish to point out that they have very powerful enemies to contend with in the *Falconidæ*, as Natterer has stated that a species belonging to this tribe, namely *Hypotriorchis rufularis*, Gray, was met by him late in the evening, after sunset, flying over the tops of figeiras (?) trees, near Sapitiba (Brazil), apparently to catch insects, and that the stomach of a female contained *Libellulidæ* (Verhandl. K. K. Zool. Bot. G. in Wien. 1863, p. 632). It will be recollected that at the last Meeting Mr. M^r Lachlan exhibited an instance of mimicry between two species of American *Libellulidæ*, so it may be worth while to inquire if these suffer similar persecution by birds of prey. At any rate, I throw out the suggestion."

Mr. Horne remarked that during his residence in India he had never seen *Libellulidæ* attacked by birds.

Papers read, &c.

Major Parry communicated the following:—

"*Lissapterus Howittanus*, H. Deyrolle, Trans. Ent. Soc. 1870, p. 98.—On perusing Prof. Westwood's recent paper in the 'Transactions' of the Society, containing descriptions and notices of several new and interesting species of Lucanoid Coleoptera, my attention has been called to a note the author has appended to his notice of an insect originally described by himself under the name of *Lissotes Howittanus*, a most remarkable and interesting form, pertaining to the family of the *Dorcidæ*. This insect has been subsequently characterised, by M. Henri Deyrolle (*loc. cit.*), as the

type of a new genus, and published as such in my Catalogue of the Lucanoid Coleoptera (*vide* Trans. Ent. Soc. 1870). In the note alluded to in Prof. Westwood's publication (Trans. Ent. Soc. 1871, p. 369) I find the following statement made by the author with reference to the species in question:—" *Lissapterus Howittanus* (Deyrolle), Parry, Trans. Ent. Soc. 1870, p. 114.—The genus *Lissapterus* of Deyrolle, to which this insect is assigned by Major Parry, must be unpublished, since I am unable to find it either in his Memoir in the Annales de la Soc. Ent. France for 1864, or in his Memoir in the Ann. Soc. Ent. Belg. for 1864, vol. ix.' Had my friend Prof. Westwood turned to page 98 of the publication he quotes, the information he was anxious to obtain would have been found, *viz.* M. Henri Deyrolle's characters *in extenso* of the genus *Lissapterus*, and these characters, I think, fully entitle the species to be raised to generic rank. I may also state that, although Prof. Westwood infers that the apterous condition of the insect had induced the generic separation, M. Henri Deyrolle does not even allude to this particular character in his definition of the genus."

Mr. W. F. Kirby communicated a continuation of his "Synonymic Notes on Lepidoptera," as under:—

"In the present paper I have brought together various detached notes on synonymy, which will perhaps be more useful in the present form than scattered.

"*Gmelin's Lepidoptera*.—The Lepidoptera Heterocera described by Gmelin and Zschach are so briefly characterised that their identification will be a work of time and trouble, and in many cases will be impossible. Six species are, however, figured, and four of these I was able satisfactorily to determine at the British Museum this year, with the kind help of Mr. Butler.

Sphinx immaculata, *Gmel.* i. 5, p. 2386; *Sphinx*, No. 283, *Zschach*, p. 95, t. 3, f. 283 = *Chærocampa capensis*, *L.*

Sphinx Pluto, *Gmel.* l. c.; *Zschach*, l. c. No. 284 = *Pergesa Pluto*, *Fabr.* (*vide supra*), and may be regarded as the typical figure.

Sphinx octopunctata, *Gmel.* l. c.; *Zschach*, l. c. No. 286 = *Chærocampa Boerhaviæ*, *F.* (= *Sph. Thyelia*, *L.*?)

Phalæna Cypria, *Gmel.* l. c., p. 2403; *Bombyx*, No. 210, t. 3, p. 210, *Zschach*, = and supersedes *Hyperchiria incisa*, *Walk.*

I may here remark that *Hyperchiria varia*, *Walk.* = *Bombyx Io*, *Fabr. nec Cram.* Cramer's *Attacus Io* will therefore require another name; and I propose to call it *Hyperchiria Vala*."

"*Sphinges of Fabricius*.—Mr. Walker has left several Fabrician *Sphinges* undetermined. *Sphinx asiliformis*, *F.*, appears to me to be a species of

Thyreus; *S. Medea*, *F.* = *Basiothia Idricus*, *Dru.*, according to Prof. Westwood: and *S. Clio*, *F.*, seems to be synonymous with the same insect. *S. minus*, *F.*, is apparently synonymous with *C. Boerhaviæ*. It must be noted that Fabricius, in his 'Mantissa,' wrongly placed his *Pergesa Pluto* (= *Thorates*, *Hüb.*), as synonymous with *C. Boerhaviæ*, reversing the diagnoses, and consequently, in his *Ent. Syst.*, we find *C. Boerhaviæ* described with the diagnosis of *P. Pluto* prefixed.

"*Chærocampa Nessus*, *Dru.* This species is figured by Cramer, t. 226 D, under the same name, but oddly enough without any reference to Drury, or to his having himself previously figured a species of *Thyreus* as *Sphinx Nessus*. Fabricius named Drury's species *Sphinx Equestris* (*Ent. Syst.* iii. 1, p. 365, n. 29); but the name being applied to Drury's species, which was published before Cramer's, of course falls.

"*Papilio hyalinus*, *Gmel.* p. 2259 (cf. *Tr. Ent. Soc.* 1869, p. 356). Since the publication of my *Cat. Diurn. Lep.* I have determined this species to be identical with *Pierella Dracontis*, *Hüb.*, which it will supersede, though Gmelin's name is not very appropriate.

"*Papilio Acidalia*, *Weber.* This species is synonymous with *Neptis aceris*, *Lep.*

"*Morpho Crameri*, *Kirb. Cat.* p. 121, n. 8 (= *Telemachus*, *Cr. nec Linn.*) According to Butler this species = *M. Iphicles*, *Feld.*; but it also = *M. Ulysses*, *Meerb. Afb. zeldz. Gew.* t. 14, 20, which is the oldest name.

"*Athyma Kresna*, *Moore* = *Limenitis Jadera*, *D'Orb. Dict. d'Hist. Nat., Atl. Zool.* ii. *Lep.* 4, f. 3 (1849).

"*Limenitis Camilla*, *L.* In 1764 Linnæus described the sexes of our English 'White Admiral,' calling the male *Prorsa* and the female *Camilla*. But as he had previously described another species under the name *Prorsa*, he properly changed the name of his second species into *Sibilla* in 1767. This therefore establishes the name of our species to be correctly *Camilla*, *L.*

"The first author who described the other species was Drury, who figured it under the name of *Papilio Sibilla*, *var.*; but it would be better to reject this name altogether, as not — *Sibilla*, *L.* Scopoli's name *rivularis*, which is usually quoted among the synonyms of this species, properly belongs, according to *Werneburg.* to *Neptis Lucilla*, *W. V.*, and is therefore inadmissible. *Lucilla*, *Esp.*, is likewise inadmissible; and we must therefore adopt *Drusilla*, *Bergstr.*, as the correct name of *Camilla*, *W. V.*

"*Attacus Paphia*, *L.* In 1758 Linnæus gave a diagnosis of this species, which will apply to several large *Bombyces*, quoting a figure of *Petiver's* (which is considered to represent *Antheræa Dione*, *Fabr.*) and (with doubt) a bad figure by *Catesby* of *Telea Polyphemus*, *Cr.* But in 1764 he carefully

describes *T. Polyphemus* under the name of *Paphia*; and as he describes no allied species, and referred in 1758 to Queen Ulrica's Museum as containing specimens of his *Paphia*, I think we can hardly hesitate to regard Cramer's *Polyphemus* as identical with it. Cramer figures *Antheræa Mylitta*, *Dru.*, as *Paphia*, *L.*; but there can be no doubt that this is an error, although some of the figures quoted by Linnæus in his later works very possibly represent that species."

"*The date of Cramer's Works.*—Cramer's '*Papillons Exotiques*' was published in parts at intervals. The exact dates are now lost. The address prefixed to vol. i. bears date Dec. 2, 1774; and vols. i. and ii. are dated 1779, vols. iii. and iv. 1782, and the supplementary vol., by Stoll, 1791. Hagen states that parts 1—7 (plates 1—76) were published in 1775, and part 8 (plates 77—96, completing vol. i.) in 1776. Mr. Butler, I believe, possesses a memorandum that plates 1—36 were published in 1775, and plates 37—48 in 1776. In the part commencing with plate 133, Sulzer's '*Abgek. Gesch. d. Insecten*' is quoted as having been published *in the year* 1776. If plates 133 and following had not been published *later* than 1776 it is probable that Cramer would have noticed the book either as '*just published*,' or '*published this year*.' Fabricius, in his '*Genera Insectorum*,' published at the beginning of 1777, quotes only the first four parts, or plates 1—48. But as Fabricius in 1781 was only acquainted with 216 plates, there is good reason to suppose that he did not receive the separate parts of Cramer's work as they were published. In the late Mr. Haliday's entomological library, now in the possession of the Royal Irish Academy, is a complete set of Goeze's '*Entomologische Beyträge*,' including even vol. iii. part 4 (Leipzig, 1783, pp. xx. 178), unknown to Hagen. The prefaces are mostly dated '*before Michaelmas, 17—*,' and contain notices of the parts of Cramer which have appeared up to the time of publication. Unfortunately this information is only useful after 1779, when the two first volumes of Cramer (plates 1—192) were already completed. Between Michaelmas, 1779 and 1780, plates 193—276 appeared; between Michaelmas, 1780 and 1781, plates 277—336 were published; and the work is known to have been completed in the following year. A considerable part of vols. iii. and iv. (certainly all after plate 252, and perhaps several earlier plates) were edited by Stoll after the death of Cramer. As regards Stoll's Supplement, the title-page bears the date 1791; but I have seen a copy in the original covers, upon which part 1 (plates 1—8) was dated 1787, and the four subsequent parts 1790, although it is more likely that a part would have been issued annually; but of this I have no evidence."

"*Papilio Hyale*, L.—I have already (Tr. Ent. Soc. 1870, p. 141) questioned the correct identification of this insect, and I now feel sure that the

insect intended by Linnæus is the female of *Papilio Croceus*, *Fourer*. = *Colias Edusa*, *auct.* The Linnean description is as follows (Fn. Suec. p. 272):—‘*Pap. Hyale alis integerrimis rotundatis flavis; posticis macula fulva; subtus puncto sesquialtero argenteo. . . . Simillimis Palænoni, sed alæ magis flavæ. Alæ primores flavæ, apice nigræ, nigredine fascia quasi lutea in duas partes dissecta. Secundariæ supra in medio puncto s. macula ferruginea, cui subtus opposita. Puncta duo argentea approximata, annulo ferrugineo cincta; altero puncto valde parvo. Antennæ et margo ciliaris alarum rubra ut in sequente [P. Palæno].*’ In favour of the species intended being the modern *Hyale*, it may be contended, (1) that the ground colour is called *flavis*; (2) that the Linnean type agrees with this species. I can only reply to the second point from hearsay; but I believe I am correct in asserting that the Linnean types of *Colias* are very doubtful. (Compare Prof. Westwood’s remarks in his ‘British Butterflies.’) *C. Palæno* is by far the commonest species in Sweden, and there has never been any doubt about this species, except that some of the older authors who were unacquainted with it gave *Hyale*, *auct.*, under this name. Both *C. Edusa* and *C. Hyale*, *auct.*, are of doubtful occurrence in Sweden; and it is very unlikely that Linnæus was acquainted with either of the high northern species, *C. Nastes* and *C. Hecla*. *C. Electra* was subsequently described by Johanssen and Linnæus as ‘*fulvus*,’ which has helped to obscure the other descriptions. The Linnean description states that *Hyale* is ‘*magis flavis*’ than *Palæno*. This will not apply to *Hyale*, *auct.*; which if anything is *less* yellow. Then the fascia dividing the dark hind margin is called ‘*lutea*,’ which indicates a decided difference in that tint from the ground colour. This cannot apply to *Hyale*, *auct.*, but applies very well to *Croceus*, female. All the other points in the description would apply equally well to both species. Eight references are quoted by Linnæus in his different works for his *Hyale*. I have consulted six of these, and all refer to *C. Croceus*, and every figure quoted represents the female. In one or two cases (*e. g.* by Scopoli and Geoffroy) *Hyale*, *auct.*, is casually noticed as a *var.* or as the other sex; but the two species were never properly separated till Denis and Schiffermüller, in the ‘*Wiener Verzeichniss*’ (1775), gave *Hyale*, *auct.*, as *Palæno*, *L.* (certainly an error) and *Croceus* as *Hyale*, *L.*; another reason why the name *Hyale* should be applied, as it was by nearly all the old authors, to the latter species. The only name which I can find for *Hyale* (except *Palæno*, which is inapplicable) is *Sareptensis*, applied by Staudinger, in his ‘*Catalog*’ (1871), p. 5, to a variety. It is a very inappropriate name for an insect of so extensive a range; but unless all the misnomers in Entomology are to be rejected, I do not think we can avoid adopting it.”

January 1, 1872.—A. R. WALLACE, Esq., F.Z.S., President, in the chair.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—‘Proceedings of the Royal Society,’ No. 130; ‘Catalogue of Scientific Papers,’ vol. v.; presented by the Society. ‘The Journal of the Linnean Society,’ Zoology, No. 54; ‘Proceedings of the Linnean Society of London,’ Session 1871-72; by the Society. ‘Coleopterologische Hefte,’ No. VII.; by the Editor, Herr E. v. Harold. ‘L’Abeille,’ 1871, livr. 10, 11; by the Editor, M. S. A. de Marseul. ‘The Zoologist’ for January; by the Editor. ‘The Entomologist’s Monthly Magazine’ for January; by the Editors. ‘Exotic Butterflies,’ Part 81; by W. W. Saunders, Esq. ‘The Entomologist’s Annual for 1872;’ by H. T. Stainton, Esq. ‘Contributions pour servir à l’Histoire Naturelle des Ephémérides,’ No. 3; by the Author, Dr. Emile Joly.

Papers read, &c.

The Secretary read a communication from Mr. Gould respecting the question of the liability of Odonata to the attacks of birds, of which the following is an extract:—“I believe that the larger dragon-flies are very liable to the attacks of birds, and have no doubt that the hobby and kestrel occasionally feed upon them. With regard to the small blue-bodied species (Agrionidæ) frequenting the sedgy banks of the Thames, I have seen smaller birds—sparrows, &c.—capture and eat them before my eyes, after having carefully nipped off the wings, which are not swallowed. This must take place to a considerable extent, as I have observed the tow-path strewn with the rejected wings.”

Mr. Müller called attention to a pamphlet just presented to the Society, viz. ‘Contributions pour servir à l’Histoire Naturelle des Ephémérides,’ by Dr. Emile Joly, in which the author asserted his belief that the so-called Crustaceous genus *Prosopistoma* is founded upon the immature condition of species of *Ephemeridæ*.

Mr. M’Lachlan said that he had been made aware by Mr. Crotch of an inaccuracy in his paper on certain Linnean species of *Myrmeleon* (Tr. Ent. Soc. 1871, pp. 441—444). The inaccuracy referred to consisted in his having ascribed to Linné the words “*alæ obsolete nebulosæ*” in the description of the ant-lion in the first edition of the ‘Fauna Suecica,’ whereas Linné there says nothing whatever about the perfect insect, the description referring entirely to the larva and habits. Mr. M’Lachlan explained that he had been led into this error through having neglected to notice that the words were MS. additions by Linné in his own interleaved copy of the ‘Fauna’ in the possession of the Linnean Society. The error did not alter the bearings of the case.

Mr. F. Smith communicated a long letter from Mr. J. T. Moggridge, dated from Mentone, November 7th, relating to the habits of certain species of ants belonging to the genus *Aphenogaster*. Mr. Moggridge had observed that two species of this genus (*A. structor* and *A. capitata*) frequenting the sandstone slopes of that neighbourhood were, in the winter months, in the habit of carrying into their nests the seeds of certain late-fruited plants, especially of *Polygonum vulgare*. The nests of *A. capitata* extend a long way into the rock; with the aid of a chisel and hammer these excavations had been traced to their limits, and in one case the channels ended in a spherical chamber, filled with the seeds of a grass which he had seen the ants in the act of transporting. Outside the channels there was generally a heap of the husks of the various seeds, and sometimes one of those heaps would fill a quart measure. These husks had had their farinaceous contents extracted through a hole on one side. He purposely strewed near the nests large quantities of millet and hemp-seeds. After the lapse of a fortnight many of these seeds, previously conveyed into the nests, had been brought out again, they having evidently commenced to germinate, and he then found that the radicle was gnawed off from each seed, so as to prevent further growth, and, this being effected, the seeds were carried back again. The cotyledons of germinated seeds were removed from the nests. The oily seeds of hemp appeared to be greatly in request. He had not found any true Myrmecophilous beetles in the nests, but a specimen of a *Choleva* was observed, and *Aleochara nitida* swarmed about the entrance of the galleries. There were, however, numerous immature examples of a *Lepisma*, and a Coleopterous larva, to which the ants paid great attention, an agitated group of workers seizing one of them when placed near them, removing it to a place where there was loose friable earth, into which it immediately began to burrow. The only recent account of the storing of grain by ants that Mr. Moggridge had been able to find was in the 'Encyclopædia Popolare,' Torino, 1845, in which the explanation given was that the ants used the seeds for building materials. He promised to make further observations on these grain-storing species, and to communicate the results to the Society.

Prof. Westwood called attention to a paper on the same subject by the Rev. F. W. Hope, published in vol. i. of the 'Transactions' of the Society (pp. 211—213), 1839.

Mr. Butler read a paper "On certain Species of Pericopides in the Collection of W. Wilson Saunders, Esq."

New Part of 'Transactions.'

Part iv. of the 'Transactions' for 1871 (published in December) was on the table.—*R M. L.*

Notices of New Books.

Birds of the West of Scotland, including the Outer Hebrides.

By ROBERT GRAY. Pp. 520, with 15 lithographic illustrations.

Glasgow: Thomas Murray and Son.

WE are fresh from reading Mr. Gray's most interesting book on the Birds of the West of Scotland, a work which in our estimation should have a place on every naturalist's bookshelf side by side with his Stevenson and his Yarrell. Every page in it proclaims that the study of birds has been the writer's pursuit all his life-time, and that a quick and intelligent observation has been brought to bear upon the habits of his favourites. There will be many a Southron ornithologist who will be disposed to envy Mr. Gray in his having seen the golden eagle, the greenshank, the blackthroated diver, and that fairy little bird, the rednecked phalarope, in their breeding haunts; and it was to see what he had to say about these northern birds that we turned instinctively, when the 'Birds of Western Scotland' first reached us from our bookseller. It is no wonder that both the golden and the whitetailed eagle should be fast becoming rare objects even in the wildest and bleakest districts of the Highlands, after the tremendous slaughter which they have experienced for the last twenty years from the preservers of game. Mr. Gray tells us many a sad tale of eagle-murder, and his lists of the noble victims excite our indignation. On one farm in Skye *sixty-five* eagles were destroyed within a few years; three only were golden eagles. In Sutherlandshire (as Mr. Gray was informed by Mr. Harvie Brown) one person in the short space of three weeks killed *sixteen* adult golden eagles and sea eagles. And again, "During the last nine years a keeper in Skye has shot *fifty-seven* eagles on a single estate." And a keeper in Ross-shire confessed that during twelve years he had shot no less than *fifty-two* eagles, besides taking numbers of both eggs and young. In many parts of Scotland landed proprietors are now endeavouring to protect the few surviving eagles, but it is probable that they will fail in preserving these much-persecuted birds; for even if the keeper's gun be no longer pointed at them, the shepherds are not likely to resist the large sums which are now offered by collectors for eagles' eggs. The writer of this has travelled much in the Scotch Highlands, but,

although on the constant look-out, has never had the satisfaction of seeing an eagle on wing. He was once driving with a large party in a *char-à-banc* through Glencoe. A lady present felt that the sight of an eagle was necessary to complete the wildness of the scene, and greatly complained that the king of birds was not visible. At last the driver, who seemed vexed that anything should be wanting from the scenery he was exhibiting, and unwilling that the tourists should go away and bring a slur upon the reputation of the country as without eagles, pointed with his whip to a kestrel hovering over a high pinnacle of rock, and gruffly said, "There's an eagle." As all our party were greatly delighted we felt bound to hold our tongue, and not betray the driver or dispute his extemporised eagle.

While the largest of our raptorial birds is fast disappearing from that part of the United Kingdom with which it is most associated under the agency of a ceaseless persecution, another interesting bird is annually decreasing in numbers, through causes which are connected with the destruction of the Falconidæ. Of the chough Mr. Gray re-echoes the report which reaches us from all stations which were once tenanted by it,—that it has either entirely disappeared or is only observed in diminishing numbers. The explanation of this would seem to be that the chough is a less persistent species than the jackdaw. This last noisy and impudent thief is everywhere multiplying now that the hawks have been exterminated which used to keep him down, and is fast driving out the chough. We have ourselves noticed that the jackdaw is considered bad company and avoided by his red-legged congener, and the unlimited increase of the distasteful rival has proved too much for him. The chough may probably (although we doubt it) sometimes go to roost with the crow, but he certainly, under the extremest straits of poverty, would avoid such a strange bedfellow as the jackdaw. But if the chough is ceasing out of the land, there is evidence that the wood pigeon is becoming too familiar. After what Mr. Gray, upon the authority of Lord Haddington and others, has recorded of the voracity of the ring dove, few will be disposed to question the great injury which this bird inflicts upon agriculturists. In many parts of Scotland ring doves have increased in an extraordinary manner.

"In East Lothian the wood pigeon is perhaps more numerous met with than elsewhere in Great Britain, yet it is not more than eighty years

since it was quite unknown. Mr. Hepburn, in referring to this fact, in a very interesting paper published by him in the 'Proceedings' of the Berwickshire Naturalists' Club for 1848, says:—'I am acquainted with a man, now sixty-five years of age, whose bird-nesting days were spent in the woods near Gifford, and he states that the wood pigeons were then so very rare that the discovery of a nest was looked upon as a great feat; and there are several people in the parish of Dirleton who remember having gone to look at a wood pigeon feeding in a cottage garden during the long snow storm of 1791.' Mr. Hepburn also states that 'the appearance and subsequent increase of the wood pigeon has followed the introduction of the clovers and turnip, and the extension of fir plantation, and all parties look upon these birds as the greatest curse to agriculture.' It is remarkable that, after a lapse of twenty years, during which interval active measures have been used to keep down its numbers, this bird should still be regarded as a rapidly increasing pest, and an agricultural scourge of such magnitude as to baffle all attempts to bring about even a partial remedy. As a proof of the enormous flocks still to be found in East Lothian, which occupies but a limited area compared with other Scottish counties, I here give the particulars of the numbers killed during the last eight years, under the auspices of the United East Lothian Agricultural Society, which have been obligingly furnished to me by the Society's secretaries:—

Year 1863 (including December, 1862)	-	-	-	-	-	-	-	-	13,450
„ 1864	-	-	-	-	-	-	-	-	15,289
„ 1865	-	-	-	-	-	-	-	-	29,141
„ 1866	-	-	-	-	-	-	-	-	17,227
„ 1867	-	-	-	-	-	-	-	-	10,461
„ 1868	-	-	-	-	-	-	-	-	16,760
„ 1869	-	-	-	-	-	-	-	-	17,324
„ 1870 (till 6th June only)	-	-	-	-	-	-	-	-	10,788
Total	-	-	-	-	-	-	-	-	130,440

But in spite of this tremendous slaughter, Mr. Gray reports that there is no diminution in the number of the birds. The murdered pigeons are replaced by migratory flocks from Norway, Denmark and Sweden, which settle in the country, and do not return again to the homes they had left. Mr. Gray himself witnessed an arrival of an immense flock of wood pigeons on the coast near Dunbar:

"I had gone out about daybreak, and was astonished to see a prodigious cloud of pigeons fully a mile seawards, steering for the nearest land. The entire body of birds alighted on the sandy beach at Caterag Bay, which they completely covered between the rocks near the limestone quarry and the opposite point in the direction of the town. I am satisfied there must have

been in the flock twenty or thirty thousand pigeons, at the lowest computation; and, from the fact of their alighting immediately on reaching land, without any preliminary survey of the ground, I concluded they had come in from a long journey. Their tameness on my approach confirmed this conjecture, as I was allowed to put them up within twelve or fifteen yards. The cloud slowly ascended, and a line was formed, six or eight birds deep, which gradually drew off the main body, forming a singular spectacle when viewed against the morning sky, and almost realizing the descriptions of Wilson and Audubon, when writing of the passenger pigeon of North America, and its 'five-mile' processions in the air."

Such an arrival as is here described portended woe to the lowland farmers, whose crops of every kind would have to pay toll.

"As an example of the bird's extraordinary voracity, Lord Haddington has forwarded to me, in separate cases, the contents of the crops of four wood pigeons opened at different times: the first contains 144 field peas and seven large beans; the second 231 beech-nuts; the third 813 grains of barley; and the fourth 874 grains of oats and 55 of barley. Such damage may be better estimated from the fact that the bird is known to feed *three times daily*, each meal probably involving the consumption of an equal quantity of grain by a single bird. In a grain-producing district, therefore, where from 15,000 to 29,000 pigeons have been destroyed within twelve months, without effecting any apparent decrease in their numbers, the loss to agriculturists must be enormous."

No doubt this increase of a mischievous bird is due to several causes, but the chief of these may be justly regarded to be the greater adaptation of the country to their habits afforded by the high farming of modern times, and the destruction of all kinds of hawks which would have kept the pigeons under.

We pass on now to other birds, which are noticed in an interesting manner in Mr. Gray's volume. He has but a low opinion of the Corvidæ. The greatest thief of the whole family would seem to be the hooded crow, which interbreeds very commonly with the carrion crow, many cases having come under Mr. Gray's notice. Here is one:—

"In a glen near the banks of Loch Lomond a female hooded crow had her nest, and had commenced laying. Her first mate was a carrion crow, and after the keeper shot him the hen bird went away, and returned with a second bird, also black. He, too, was killed a day or two afterwards, but the dauntless widow got another black mate within a few hours, and thus

allured a third crow to his doom, for it is needless to say that the watchful keeper was only too glad of the opportunity of shooting the rascal. At length the sitting bird having laid the full complement of eggs, remained at home and brought up her young ones till they could be conveniently killed, after which she herself fell a victim. The keeper, in telling me this episode of crow life, said he was *almost sorry* when on picking her up he found she had only one leg, the other having apparently been taken off in a trap a considerable time before."

Respecting the mischief perpetrated by the hooded crow in the Hebrides, Mr. Gray writes:—

"On the western side of the Long Island, where farming is extensively practised, they are particularly mischievous, their plundering raids among lambs and poultry being distinguished by an amount of wariness and cunning which makes their unwelcome presence a subject of constant annoyance. Away from the coast their perpetual thefts are not less felt. In spring and summer, during the time of breeding, no bird is safe against their attacks—a momentary exposure of the nest and eggs being too great a temptation to the feathered vagabonds. Even the golden and sea eagles frequently lose their eggs by these crows."

The habit of the oystercatcher of ascending the course of rivers and passing the summer far inland is noticed by Mr. Gray. We can ourselves remember our surprise, some few years since, at seeing oystercatchers in a meadow not far from Blair Athole, in company with starlings and jackdaws, the time of the year being the beginning of August. Some of those observed by Mr. Gray were seen near the same spot. It is worth while to quote Mr. Gray's remarks upon the subject.

"The oystercatcher pairs early in the season, and in some parts of Scotland is known to travel long distances inland. When travelling from Perth to Inverness in April, 1870, I observed several pairs on the banks of the Tay evidently mated. Near Dalguise, I saw others frequenting ploughed fields at some distance from the river; and at Ballinluig two or three pairs were observed near a farm steadily feeding not more than twenty yards from the pigeons and poultry. On reaching Pitlochry, I found five or six pairs, all apparently mated; and finally, as we passed Blair Athole and proceeded northwards towards Struan, I counted about a dozen more, showing that these birds follow the windings of such a river as the Tay, and take up their summer quarters on its banks at the commencement of the breeding season. About a week afterwards, while travelling along the side of the Spey from Rothes to Abernethy, I took notice of the fact that

pairs of this bird were located in the same way on the banks of the river from the Moray Firth to the confines of Invernesshire, where they would almost meet those coming from the Firth of Tay. In like manner these birds ascend the Findhorn as far as its source in the Monadhliadh Mountains, and also penetrate to Lochness and Loch Oich, where they are met by others which have entered by the South at Loch Linnhe. The same remark applies to the whole of the western coasts, where the many streams and sea-lochs that characterize that side of Scotland attract the oystercatcher and other birds of like habits, and lead them gradually inland, so that during the breeding season they turn up before the tourist almost everywhere."

One of the things which astonishes an observer of birds from the South who visits Scotland is the extraordinary number of peewits. The moors, the pastures, the shores of the great tidal rivers, are frequented by thousands; everywhere in Scotland the peewit is to be seen flying with its characteristic and uncertain wheelings in the air, and its cry is one of the most familiar sounds which strikes the ear. In Scotland there is a prejudice against the peewit. It is little regarded as an article of food, and in many parts it bears an ill name because, by its restless flight and loud cries, it is said to have often betrayed little gatherings of Covenanters, when met out on the bleak moor, to the troopers who were in search of them. The writer of this notice was once looked upon with much wonder by the head keeper on a grouse moor where he was shooting because he wasted a cartridge upon one of these birds, and it took all his powers of persuasion to induce his friend to consent to its being cooked and set upon table. However, when tasted it was candidly admitted that the peewit was not to be despised.

"In the wildest tracts of moorland the lapwing is often found breeding at a considerable distance from any homestead or shieling, away in the barren wastes abandoned to Highland sheep and black game. There, in the bare patches that meet the eye,—green spots in the midst of the brown and flowerless heath,—small companies congregate and occupy their encampments with watchful care. At this season the vigilant creatures are easily alarmed, and become restless and clamorous on the appearance of any object, whether man or dog, keeping up a constant and wailing outcry so long as the cause of their disturbance remains in sight. In some parts of the South of Scotland the lapwing is on this account looked upon with great dislike, the behaviour of one of these colonies calling to memory the betrayal of persecuted Covenanters, whose movements on the hill-side were in constant danger of detection by their enemies being so guided to their place of

concealment. The following original lines, taken from the 'poet's corner' of a country newspaper, though somewhat invective in their style, fairly express the feeling still prevalent in the minds of some of the shepherds and others now living near the scenes of by-gone persecution and bloodshed:—

“TO THE PEESWEEP.

“Thou idle, ill-conditioned bird,
At sight of men most strangely stirr'd!
Was ever passion as absurd
Yet hatch'd in breast?
Can body g'ye a pleasant word?
Thou waur than beast!

“What though ye're ruff'd wi' bonny black,
Wi' glancing gray out owre your back,
And wame and wings soft linings tak'
The hues o' snaw,—
Your idle, endless, senseless clack,
Just mars it a'.

“'Tween herds and you there's deadly feud;
He breaks your eggs and skails your brood,
And—waur than grudging ye a rood
O' skrunty heather—
He'd pook ye bare, fra' tail to hood,
To the last feather.

“He minds what Scotland greets for yet,
When helpless Hill Folk, hard beset,
Could naewhere but in muirlands get
A night's safe quarters,—
Ye brocht the troopers on them het,
And made them martyrs.

“O sorra on your wicked din,
And shame on a' your kith and kin!
And though there's naething 'neath the skin
That's fit for pot,
Wad ony body ca't a sin
To wuss ye shot?”

In common with most other observers of birds who have had opportunities of examining many specimens of the dunlin, Mr. Gray has been puzzled by the great variation in size to which that species is subjected. The ordinary wild-fowl shooters around our coasts are well acquainted with the fact that there are larger and smaller dunlins. A boatman we have often employed cuts the difficulty by declaring that the smaller birds with short bills and a

ruddier plumage are "summer larks," and are only seen during the summer months, whereas the larger birds with bills long and often curved as much as the bill of the curlew sandpiper are autumn arrivals. Our own observation tends in a great way to confirm this distribution of the two races of dunlins which apparently are to be found on our coasts into summer and winter birds. We have noticed large flocks of the smaller and brighter birds in the beginning of May, when they are so tame that they will almost suffer themselves to be trodden upon, in this tameness seeming to show that they have but just arrived, and have observed them all to be short-billed dunlins, with the ruddier tints upon the back and the smaller band of black on the under parts, which are the marks of the smaller race. We have never seen a short-billed dunlin among birds shot in winter, and have remarked then that all were long-billed. But we will quote what Mr. Gray has written upon the subject:—

"The variations to which this species is subject appear to be much greater than those occurring in any other wading bird of its size. It would almost seem as if there were several races to be found throughout Scotland. In some districts of the Outer Hebrides, for example, the dunlin is smaller than that of the mainland—a remark which applies to the entire bird, and not to any particular feature. The bill is at least one half shorter; the tarsi and toes more slender and diminutive; the dorsal plumage redder and more streaked; and the black abdominal patch not so large. When comparing extreme specimens from this part of Scotland and the eastern counties—that is to say, taking the smallest from the West and the largest from the East, the Hebridean bird may safely be said to be not much over half the weight of the other. Some of the dunlins on the western mainland have the bill considerably depressed towards the base; indeed, in a few specimens which I have handled, this feature was so marked as almost to justify a novice in mistaking them for the broadbilled sandpiper. I have also obtained very characteristic examples of this smaller race, with very short and straight bills, in some of the inner islands. In 1870 I had several specimens in full breeding dress from Gigha and Tyree. This tendency in the dunlin to excessive variation has long been noticed, and has been referred to by various British and Continental ornithologists. Sir William Jardine appears to have met with a breed frequenting some of the lochs in Sutherlandshire, which presented marked differences in size and coloration from the ordinary type; and Macgillivray makes the remark, that 'the birds that visit the eastern coasts of Scotland seem in general much larger.' To this I may add, that during many years' careful

examination of the species in the county of East Lothian, it was remarked by Mr. Sinclair and myself, that the greater number of dunlins shot by us were birds fully as large as the curlew sandpiper, and had bills of equal length and curvature."

This variation of the dunlin is in our mind a conspicuous instance of a fact which obtains with respect to most birds, *viz.* that there is a larger and a smaller race of the same species. It used to be well known to the old falconers that certain breeding-stations were famous for larger and more powerful falcons than others, and a cast of hawks from any eyrie of repute could always command a high price. We have ourselves seen hobbies and merlins which differed remarkably in size, and this difference was not one which was due to age or sex. Sportsmen are well acquainted with larger and smaller races of partridges. It is not long since a smaller race of *Charadrius hiaticula* has been observed on our coast, and specimens of this smaller plover have sometimes been regarded as the continental *C. minor*.

Mr. Gray furnishes us with a charming picture of the rednecked phalarope as observed by him at one of its breeding-stations in the Outer Hebrides. He says that the birds on their arrival in the summer at once take up their quarters on the small lakes,—

"Where they may be seen swimming on the calm surface, and moving in circles with great elegance. Any one who chooses to wade near enough, and make up his mind to stand knee-deep in very cold water, may sketch the beautiful creatures as they paddle about like so many miniature ducks, and write down a pleasant chapter on their habits in his note-book. They seem to have no fear, but come right forward as if curious to know what the intruder is about, uttering all the time a feeble note with every motion of their head, not unlike the ticking of a clock. The little half-clad boys of Benbecula, who of late years have heard of the esteem in which their familiar visitor is held, often attempt to catch the phalaropes by wading through their haunts; and the sight of half-a-dozen such young rascals in full pursuit, and getting soused occasionally, through a false step in the eagerness of their clutch, is very diverting."

We might reasonably expect that a history of the birds frequenting such a country as Scotland would be rich in the information it gives us of the various Anatidæ which are to be found in its salt and fresh-water lochs, its firths, and on the rough tides which sweep round the thousand islands of its western coasts.

Nor are we disappointed by Mr. Gray's pages. We have only space to epitomise the more interesting facts which are to be gleaned from them. We learn that the graylag goose is the only wild goose which at the present time breeds within the limits of the British Islands. This fine bird

"Is now almost wholly confined during the breeding-season to some of the bleakest bird-nurseries of the Outer Hebrides. There it leads a comparatively quiet life, being but seldom molested, save at the season when the slender crops are being gathered, and even then the native farmers prefer the practice of driving it off by lighting fires, to the extreme measure of powder and shot. For the last hundred years, indeed, the flocks of wild geese that collect about that season—and a very important one it is to these isolated husbandmen—have been kept at bay by fires alone. As soon as the breeding-season is over the geese gather into large flocks, and are then very destructive to farm produce of all kinds; indeed, it requires the utmost watchfulness on the part of the crofters to keep them in check. Several fires are made in the fields, and kept burning night and day; by this means the crops are to a great extent saved, but the moment any of the fires are allowed to fail, the geese, which are continually shifting about on wing, suddenly pitch on the unprotected spot, and often do much mischief before they are discovered."

It occasionally happens that in the wild districts of the North-Western Islands the ornithologist who has been adventurous enough to penetrate them is favoured by spectacles which are calculated at once to astonish and delight him. Speaking of the hooper, Mr. Gray has recorded that on Loch Bee, in South Uist, which is never known to be frozen over, this is an especially numerous species in severe weather, as many as four hundred having been seen there in one flock. And again, the great northern diver (which has not been known to nest in the Hebrides) is occasionally seen in considerable numbers upon its return from its breeding-haunts in August.

"They return some time in August, and are seen in groups of fifteen to twenty birds, swimming near the shore immediately on their arrival. I observed a gathering of this kind on the west side of Benbecula on the 29th of August, 1867, and was told by a friend residing there that he had seen them fully a fortnight before. All the birds were in brilliant summer plumage, and, as a group, formed a spectacle which is not often looked upon by even the most fortunate ornithologist."

The commonest of all the wild geese of the West of Scotland is the bernicle, which is especially abundant in the Outer Hebrides. Mr. Gray relates the following singular habit of this species :—

“Previous to leaving, the bernicle geese assemble in immense flocks on the open sands, at low tide, in the Sounds of Benbecula and South Uist; and as soon as one detachment is on the wing it is seen to be guided by a leader, who points the way with a strong flight northwards, maintaining a noisy bearing until he gets the flock into the right course. After an hour’s interval, he is seen returning with noisy gabble, alone, southwards to the main body and taking off another detachment as before, until the whole are gone.”

The longtailed duck appears to be a most amusing bird: Mr. Gray complains that ornithologists have not done justice to it. The species is by no means so rare as it has been commonly represented. In the winter season it is a very common bird among the Hebrides, and small flocks regularly frequent the whole of the eastern and western sea-bords of Scotland. The longtailed duck delights in wild and stormy weather.

“No creature,” writes a correspondent to Mr. Gray, “revels more amidst the gloom and rage and horrors of winter than the ice duck. The cry of this bird is very remarkable, and has obtained for it the Gaelic name of *Lach Bhinn*, or the musical duck, which is most appropriate, for when the voices of a number are heard in concert, rising and falling, borne along upon the breeze between the rollings of the surf, the effect is musical, wild, and startling. The united cry of a large flock sounds very like bagpipes at a distance, but the note of a single bird when heard very near is certainly not so agreeable. On one occasion I took great pains to learn the note, and the following words are the nearest approach that can be given of it in writing: it articulates them very distinctly, though in a musical bugle-like tone:— ‘*Our, o, u, ah! our, o, u, ah!*’ Sometimes the note seems to break down in the middle, and the bird gets no further than *our*, or *ower*, which it runs over several times, but then, as with an effort, the whole cry is completed loud and clear, and repeated several times, as if in triumph. At this time they were busily feeding, diving in very deep water on a sand bottom, and calling to one another when they rose to the surface. * * * * They are of a very lively and restless disposition, continually rising on the wing, flying round and round in circles, chasing one another, hurrying along the surface, half flying, half swimming, and accompanying all these gambols with their curious cries. When the storms are at their loudest, and the waves running mountains high, then their glee seems to reach its highest

pitch, and they appear thoroughly to enjoy the confusion. When watching them on one of these occasions, I had to take shelter under a rock from a dreadful blast, accompanied by very heavy snow, which in a moment blotted out the whole landscape; everything was enveloped in a shroud of mist and driving sleet, but from the midst of the intense gloom there arose the triumphant song of these wild creatures rising above the uproar of the elements; and when the mist lifted, I beheld the whole flock careering about the bay as if mad with delight."

The above graphic description was written from Iona, a residence which during a winter storm must be wild indeed.

Scotland, with its numerous lochs, affords attractions to grebes. We learn from Mr. Gray that, arranged in their order of rarity, the species known to the British list would stand as follows:—

Eared Grebe,
Great Crested Grebe,
Rednecked Grebe,
Sclavonian Grebe,
Little Grebe,

the species heading the column being most seldom seen. Writing of the Sclavonian grebe Mr. Gray says that—

"The habits of this lively species may be best studied in spring, just about the time when it collects in pairs before migrating. In many of our western sea-lochs it is very conspicuous at this season, and on calm evenings, when the water is motionless and burnished by the slanting sunlight, delighting the eye with a series of coloured cloud-pictures as the daylight recedes, the ear at once catches the comical call-notes of these interesting birds holding their Punch-and-Judy conferences. Far off, at almost a mile's distance, the little specks may be distinctly traced on the unruffled loch, shifting in circles and chasing each other, accompanying all their gambols with their shrill intercourse about their future movements."

This species has not yet been detected nesting in Scotland. The redthroated diver is the commonest of all the divers in Western Scotland, and breeds on most of the lochs.

"On the Hebridean lakes the redthroated diver is extremely suspicious and vigilant, never allowing a very near approach unless the eggs have been for some time sat upon, when the female, and even the male, who is her constant attendant, remains at hand, swimming anxiously within gun-shot, and betraying the utmost concern for the safety of their treasure. Should the eggs be taken, the poor creatures seem to feel the deprivation with

unusual keenness, and give expression to their grief—for sorrow I really believe it to be—in loud lamentations. These cries are so full of melancholy meaning, when heard echoing in the midst of the rock-bound lakes of that barren district, that few persons hearing them once would ever desire their repetition. Many of the natives, indeed, would never think of robbing the birds, on that account alone. I once asked a man living near their haunts on Loch-an-Astrom to get me the contents of a nest on the point of a small islet, where I had watched the birds for some days. ‘Ah, maister,’ said he, ‘I could soon do that, but I don’t like to hear the birds cry.’ When I afterwards saw the proud parents giving their two little black downy things their first swimming lesson at early dawn, I could not help thinking that the loch looked much fairer on account of their presence, and that it would have been almost a shame to have invested such a scene with the story of even a bird’s despairing cries.”

At page 440 Mr. Gray describes a great epidemic which attacked many species of sea-fowl in September, 1859. “The razorbill perished in extraordinary numbers, being found in the proportion of ten to one of the other species.” These were the puffin, guillemot, and common gull: the shores were strewn with their dead bodies. It is supposed this great mortality was due to starvation, as “may be proved from the fact of hundreds—even thousands—resorting to estuaries, heedless of danger and contrary to their usual shyness. The testimony of the fishermen at various places showed that the common dog-fish was unusually abundant, while the small herring-fry and other fishes constituting the food of sea-birds had entirely disappeared.” This mortality among sea-fowl was widely extended at the time, for in the ‘Zoologist’ for that date at page 6762, is an account of dead and dying razorbills and guillemots having been seen strewing the coasts of North Devon, and we remember to have read in the papers of the day of vast numbers of dead birds having been noticed, by sailors, floating on the waters of the Irish Channel.

Mr. Gray’s book contains an able and interesting account of the history of the great auk as a Scottish bird. We have also a good description of the gannet, which may well be regarded as a characteristic bird of the Scotch avifauna, from the fact that the Bass Rock and Ailsa Crag, its most favourite stations, are both situated in Scottish waters. It is impossible to describe either the numbers of the gannet which are to be seen at either of these celebrated rocks, or the extreme beauty of the bird as it hovers just above

your head in all the richness of its 'summer's plumage, should curiosity induce you to approach its abode. We recollect that one day during a sail round the Bass Rock the gannets flew around and over us in such multitudes that the thought struck us how easily the birds might have swamped our boat had they settled upon it. We cannot resist presenting our readers with two amusing extracts from what Mr. Gray has written about the gannet. In former days the gannets which nested upon the top of the Bass were so tame

"As to allow a person to walk among them and lift and examine both young birds and eggs without much remonstrance, a sight which well repaid the trouble of a long journey. In 1859, before they finally quitted the spot,* I visited the rock, and found their habits considerably changed. The old birds were dreadfully vociferous, and in some cases showed fight. Professor Macgillivray well described their cry in comparing the torrent of crackling sounds to the words *varroch, varroch, kirra, kirra, cree, cree, krak, krak*—an address which they utter with great rapidity; but ultimately, finding that it makes no impression, they change it to a loud call for *grog*. While standing surrounded by an excited multitude of open bills I noticed my guide, one of the Cantabay boatmen, apparently absorbed in thought, 'Is there any risk of them biting?' I ventured to inquire. 'Oh, no, sir!' he rejoined, 'I was only thinking how like they are to *ourselves*.'"

Our other extract on the subject of the gannet is connected with its character as a pet.

"I have at various times had solan geese in my keeping as pets, but I am sorry I cannot say much in their favour. The last lot I had—about half a dozen—behaved very badly. They kept up an incessant clamour for fish, quantities of which they ravenously, and I may say thanklessly, devoured; for I no sooner presented myself within the enclosure where they were confined than I was furiously met by the whole gang, launching their wedge-shaped bills wherever they could effectively strike a blow, and uttering all the while the most discordant cries it was possible for birds to give vent to. With such experience, it would be folly to recommend the gannet as a proper subject for the aviary: it does not requite one for his trouble; and, besides, it is not the most gentle occupation of a morning to be visiting one's pets armed with a cudgel."

* Not the rock itself, but the grassy slopes upon its summit, where the birds used to nest freely until they were so much disturbed and persecuted by visitors as to be driven to confine themselves to the precipitous ledges of the cliffs.

We dare make but one more extract from Mr. Gray's pleasant book, as the space for our review is necessarily limited, and this shall be an entertaining one respecting the sagacity of the arctic tern. This bird has often been noticed to wait for carriages driven across the sands to a ford. It has discovered that the wheels are of great service in assisting it to a dinner.

"At the next ford a similar scene was repeated by another group of arctic terns, which we found there waiting the arrival of some friendly travellers. In both these cases the birds showed no fear, but dexterously caught their prey, though repeatedly struck at with the whip. Twice over, by stretching out my arm, I nearly caught one of them as it poised itself for a plunge. On making particular inquiry, I was told by many of the inhabitants of both islands that this habit of the tern is a constant entertainment to those who cross the fords in wheeled conveyances. The pressure of the wheels must bring the burrowing sand-eels momentarily to the surface, and the quick eye of the tern at once enables the bird to transfix them on the spot."

In concluding our extracts from Mr. Gray's book, we think it fitting to remark that the whole volume abounds with such pictures from the life as the foregoing. There are also some charming word-paintings of the wild scenery amid which Mr. Gray has so well studied the habits of birds, which well bring back, to the eyes of those who have in time past visited it, all its sublime and rugged beauty. The beautiful Loch Lomond; the rough and precipitous coasts of Skye and Mull; the wild Isle of Iona;

"And Ulva dark and Colonsay,
And all the group of islets gay
That guard famed Staffa round."

We have looked upon them again with delight as we have read Mr. Gray's vivid descriptions of their "misty hills" and "mountain shores."

Mr. Gray's pages record the occurrence in Scotland of many species which are not recorded in such works as Yarrell; indeed, we are struck by the number of North American birds which have come under his observation. We have no doubt most of these find their way to the British Islands *via* Greenland. The American goshawk, the American whitewinged crossbill, the ruby-crowned wren, the whitethroated sparrow, the green-rump tatler (*Totanus chloropygius*), the bluewinged teal, and other North American birds

have been noticed by Mr. Gray. Of other rare stragglers from North America which have had for some time a place in our list of British birds, it is enough to say that, while Mr. Gray, from his own knowledge, is unable to add any recent examples of the pine grosbeak, he has recorded two undoubted specimens of the spotted sandpiper, which were shot in 1867 in Aberdeenshire. These were a male and a female, the former being now in Mr. Gray's own possession. We were somewhat disappointed to find no notice of the greater shearwater (*Puffinus major*) in Mr. Gray's book. This bird might well be expected to have a station somewhere on the north-west coast of Scotland. Some years ago we were told by Mr. Dunn, of Stromness, of a fishing-smack being attacked by a flock of greater shearwaters, which attempted to carry off the fish on board, and were with difficulty beaten off by the sailors after many had been killed. It is thus evident that the species frequents these northern seas, and we hoped to have heard of it from Mr. Gray. It is not a little singular that this shearwater, which used to be not uncommon off the coasts of Cornwall and South Devon,* is now seldom, if ever, seen in those districts. It may be that *Puffinus major* keeps far out to sea, and rarely approaches land, except at the nesting-season, or to roost on some rocky islets where it has escaped detection.

In taking leave of Mr. Gray's book, there only remains for us to add that it is well printed and well got up, and that the illustrations, which are lithographs, are very fairly executed.

MURRAY A. MATHEW.

Bishop's Lydeard, January, 1872.

Hints on Shore Shooting; with a Chapter on Skinning and Preserving Birds. By JAMES EDMUND HARTING, F.L.S., F.Z.S. London: Van Voorst. 88 pp. demy 12mo.

My friend Mr. Harting has done himself an injustice by the publication of this little book. Those who have read his masterly contributions to the 'Zoologist' and 'Field' could never suppose Mr. Harting a disciple or compeer of Nathaniel Winkle, so happy in having a biographer whose matchless pen has conferred immortality on that illustrious professor of the noble art of venerie in

* Our authority is Mr. Gould, in his magnificent work on British Birds.

all its branches. Yet Mr. Harting has chosen to appear in the character of a Winkle in this his 'Hints on Shore Shooting:' to begin with the beginning, let me take an inventory of the *impedimenta*, as Mr. Harting gracefully and classically calls them, essential to the success of a shore shooter. Here it is:—

A couple of old shooting suits.

A pair of waterproof boots.

A pair of lace-up boots.

Gaiters.

A change of linen proportionate to our length of stay.

A few pairs of warm woollen socks.

An ordinary 12-bore breech-loader, with three sizes of shot in the cartridges.

A waterproof cartridge-bag.

A pocket-flask.

Sherry, quantity not mentioned.

A bottle or two of the best pale brandy.

A couple of pounds of tea.

A tongue, brawn, or what not, until such time as we can stock the larder ourself with the produce of our gun.

A sharp knife.

A pair of scissors (nail-scissors are best).

A supply of cotton-wool.

A canister of plaster of Paris.

A tin of arsenical paste.

A brush to use it.

Needles.

Thread.

A wooden knitting-needle.

Sandwiches.

A good spy-glass.

Newspaper.

By an unlucky oversight my friend has omitted to mention the means of transport: without instructions on this head these *impedimenta* could scarcely be removed from the railway station to the "muds" of the "Sussex harbours." But should an aspirant to a ten-shilling gun-licence ever peruse Mr. Harting's instructions, and absolutely reach the desired haven, then his only alternative will be to set up a co-operative store, and pitch his tent in the

"drains" or on the "muds" until he has disposed of his wares at a "ruinous sacrifice." I observe that Mr. Harting airily "hints" to his readers the desirability of taking a punt: he does not actually recommend this: he only coyly and incidentally mentions it, thus—"We do not here dilate upon the most desirable form of punt, because unless you take *your own* you must be content with what you can get." This is incontrovertible; but I recommend the reader who takes Mr. Harting's "hints" not to hesitate about carrying his own punt, and inverting over the *impedimenta* as soon as they are safely deposited on the "muds." I will not dwell on Mr. Harting's instructions to "hold straight" (p. 10); "to rest our left arm and head on the fore deck" (p. 12); to keep our "gun pointing a-head in front of us" (p. 12); to get "our pipe well filled and lit": I only mention these things *en passant*, just as I may point to the wooden and Winklean sea, the wooden and Winklean birds, and wooden and Winklean figure of himself, his shooting coat, cap, trowsers, stockings and boots, as proofs of my assertion that Mr. Harting has not done himself justice. And yet, and yet, there is a possibility that the mention of these trifles may possess another teaching. The amusing American traveller who took such pains to describe the silver fork which he observed at every Britisher's table, as "four-pronged," "flattened," "spoonlike," "ugly," "useless," "senseless"—this pleasantly satirical and most instructive writer has revealed to us a fact of which we had previously no conception, *namely*, that he himself was unfamiliar with the implement he so graphically describes as highly objectionable: I cannot doubt its existence in the U. S., but I infer that it had not reached the table of our instructor or the tables of those with whom he interchanged the amenities of social intercourse. Possibly Mr. Harting's very minute instructions about "holding straight," "pointing your gun forward in front of you," &c., &c., may lead to an inference that he would by no means desire to convey. But I must not take leave of Mr. Harting with this superficial and one-sided view of his labours; he has good sterling metal in him, as the following quotations will abundantly prove: in his own subject, Ornithology, he stands his ground well and firmly—I gladly take off my hat to him, and sit attentive as at the feet of a Gamaliel: it is only on the "muds," hampered by the *impedimenta*, with his head on the fore deck of his punt, and his gun pointing forward in front of him, that I should religiously

eschew his companionship. Self-preservation is the first law of human nature. I turn to the before-breakfast hour:—

“Every naturalist discovers, sooner or later, that one hour abroad before breakfast is worth half a dozen afterwards. All nature is then seen to perfection; flowers which close their tender petals at noon are found at morn in all their beauty, on each expanded leaf a glistening drop; the birds, which are silent throughout the heat of the day, pour forth at early light their loudest melodies; the wild-fowl are busy feeding on the ooze, and the various species of shore birds, profiting by the first ebb-tide, are running here and there over the glistening sands, gleaning hastily the harvest of the sea.”—P. 27.

“Every naturalist” knows how true is this. My next quotation exhibits the author lying in a punt in a drain in one of the Sussex harbours: we wish he had not chosen *Sussex* harbours for the theatre of his labours.

“On one occasion we were lying in a punt in a ‘drain’ (as the small channels in the Sussex harbours are called), a little below a point where another ‘drain’ intersected it almost at right angles. In the latter we had marked down two curlews when several hundred yards off, and observed that they were feeding towards the junction of the two ‘drains.’ It is always a piece of luck if birds feed towards you after you have got as near to them as you can without alarming them. And this was the case in the present instance. The curlews waded up the side of the drain, which was much shallower than the one we were lying in, and in about ten minutes one of them stepped out upon the flat within twenty yards of the punt, and for a moment seemed perfectly scared. We at once cocked the gun and sat up; with a weird scream the bird took wing, and in another second fell dead upon the mud. His companion, rising out of the drain some yards further off, was only winged, and led us a rare chase over the ooze before he was secured. This incident shows that the curlew depends for safety upon his keen sight, and not upon his power of scent; otherwise the bird in question would never have walked within a few yards of the punt, which he could not see until he had stepped upon the bank.”—P. 49.

I entirely agree in the opinion that the curlew depends for safety on his sight, not on his scent: the inquiry whether this is so with birds generally, and whether we can extend it to the search for food as well as for safety, can scarcely be rendered inviting, unless by the talent of a Waterton; but it seems rather illogical to doubt the powers of an eye and an ear so perfect as they are in birds, and to assign their functions to the nose, as some naturalists

have done. It seems only necessary to look into the eye of a pigeon to be assured that that organ alone serves to guide him through "realms of air," and teaches him to recognise each object in his passage; but there is another question about the pigeon which has hitherto scarcely been discussed with that sobriety, that sincere love of truth which it merits: how does the young pigeon, taken for its first flight a distance of ten miles from its home in Spitalfields in a closed cage and a covered luggage-van—how, by what sense or instinct, does that pigeon find its way across country it has never seen, nor heard, nor smelled, being deprived of all accepted means of recognition, eyes, ears and nose? how is it such a pigeon will circle once or twice or three times, wide and wider and widest, and then go off in a direct line, and fly with unfailing certainty to its birth-place in that peristeronic metropolis? That subject must be deferred for the present.

"About the end of July, or beginning of August, great numbers of shore birds come into our harbours, and find their way from the mouths of the rivers to a considerable distance inland. Gray plovers, godwits, knots, whimbrel, greenshanks, redshanks, dunlin, and many other 'waders,' continue to arrive until the end of August, and the shores and mudflats, which were so deserted during the summer while the birds were away nesting, now present a most animated appearance. Flocks of various species, and of various sizes and colours, from the tiny brown stint (*Tringa minuta*) to the great gray heron, are scattered over the ground in all directions; now feeding busily as they follow the receding tide, now flying with noisy call to some more attractive spot. As we look down upon them from the sea-wall, they appear to be all much of the same colour, and are difficult to distinguish upon the brown mud over which they are running. See them in the air, with upturned wings, and what a different appearance they present. As the sun strikes upon the pure white of the under parts, borne swiftly onwards by rapid wings, the eye is almost dazzled at the bright contrast. Individuals are soon lost to sight as they fly closer together, and the entire flock, gradually lengthening out, sweep across the harbour like a long wave, now light, now dark, as the under or upper portions of the plumage are presented to view. Naturalists who visit the sea-side at the period of migration to which we have alluded cannot fail to admire the wonderful and graceful evolutions which these birds perform upon the wing; whilst those who reside upon the coast throughout the year must hail with satisfaction the arrival of these feathered strangers, whose presence adds so much to the beauty of the scenery, and relieves, to such an extent, the monotony of sea and sky."—P. 46.

A word as to Chapter V., intituled "Distinguishing Characters of Shore Birds." This little chapter, only fifteen pages, is worth all the rest: here Mr. Harting comes out as the accomplished ornithologist; I have read every word with pleasure and instruction: in this field he will assuredly hereafter make a name more illustrious than many of his predecessors. The following, on size of curlews, is also extremely interesting, and I could wish such notes on magnitude extended to all our waders.

"Those who have had much experience in shore shooting must have remarked how much curlews differ from one another in size. Whether this difference is dependent upon age or sex is a point still discussed by naturalists. We have hitherto been inclined to believe that the variation is owing to age; but as this conclusion has been drawn chiefly from external appearances, and in a few instances only from actual dissection (for we generally eat all the curlews we get), and, as in the case of other waders,—for example, the bartailed godwit,—the female has proved to be invariably much larger than the male, it is possible that the same rule may hold good with the curlew."—P. 51.

Here I take leave of this amusing little book, to which I heartily wish every success, and hope soon to see a second edition, in which the commissariat may be omitted, and all other *impedimenta* to success entirely removed.

EDWARD NEWMAN.

Ornithological Notes from Norfolk—October to December, 1871.

By HENRY STEVENSON, Esq., and J. H. GURNEY, JUN., Esq.

OCTOBER.

Jay.—At the latter end of this month jays were unusually plentiful at Cromer, indicating a migratory movement.—*G*.*

Pheasant.—A hen just beginning to assume male plumage was shot at Trimmingham, and a more advanced one was soon after observed at Northrepps.—*G*.

Rook.—At the close of this month some of the farmers were endeavouring to keep off the large flocks of rooks by lighting fires in their fields.—*G*.

* The letter *G* is appended to Mr. Gurney's communications in this series, in order to facilitate reference, at a future time, to the responsible author of any particular note.

Brambling.—October 5. A few bramblings at Northrepps, being the only ones seen there this season, as far as I know.—G.

Ring Ouzel.—October 4. A ring ouzel noticed by the keeper at Northrepps.—G.

Woodcock.—October 29. A woodcock seen flying over Cromer churchyard.—G.

Little Stint.—Two little stints were shot at Terrington, near Lynn, on the 4th.

Gray Phalarope.—A single bird killed some time this month near Lynn.

Spoonbill.—A rather late specimen was bought in Yarmouth Market on the 14th, and may have been the one seen near Orford by Mr. Leach (Zool. S. S. 2871). It weighed three pounds fourteen ounces, and had no crest or pectoral band, nor did I find the twisted trachea.—G.

Greater Spotted Woodpecker.—Oct. 7. One at Northrepps.—G.

White's Thrush.—Whether or not other recorded examples of this rare thrush have been merely young missel thrushes, as hinted in an editorial foot-note (S. S. 2912), there is no question as to the specific identity of the bird announced by Mr. T. E. Gunn (S. S. 2848) to have been killed at Hickling, in this county, on the 10th of October. Mr. Borrett, who shot it in a low meadow within about a mile of the sea-coast, described its flight as resembling that of a woodcock, for which bird he mistook it as it rose some thirty yards off. This very beautiful specimen is exactly represented by the figure in Gould's 'Birds of Great Britain.'

Richardson's Skua.—An immature bird was killed somewhat inland, at Burlingham, on the 14th. In Mr. Durnford's recent note on this species (S. S. 2906) the heading should read Suffolk, *not* Norfolk.

Gray Crow.—On the 27th, as a gentleman was shooting partridges at Northrepps, he wounded one, which fell at some distance, and which he sent his retriever to fetch. The dog was gone a long time, and on his going to look after him, he actually found a gray crow disputing the possession of the wounded bird.—G.

Nocturnal Flight of Birds.—To the notices in the 'Zoologist' for October and November, under the above heading, of the occurrence, in various parts of England, of immense flocks of plovers and other birds, on the nights of the 6th, 8th and 11th of September, it may be as well to add that, on the evening of the 6th, after a very

severe thunder-storm, with torrents of rain, which commenced about 9 P. M. and lasted nearly an hour, an immense flight of birds was heard calling over this city (Norwich). The clouds were still black and the lightning very vivid, and the birds, evidently consisting of many different species, continued to fly round and round, calling incessantly. By eleven o'clock the storm had passed over, and as the moon rose and the stars shone out once more the mingling notes of these migrants died away in the distance.

Slavonian Grebe.—A male shot near Lynn on the 28th.

NOVEMBER.

Turdi.—Fieldfares and redwings seem extremely scarce at Northrepps, near Cromer, and the keeper notes a great paucity of thrushes. They are altogether outnumbered by their more stay-at-home relations, the blackbirds, and by that increasing species, the missel thrush.—*G*.

Golden Plover.—A very large flock seen on the 31st near St. Faith's workhouse.—*G*.

Woodcock.—Woodcocks have been remarkably scarce this season. Thirteen at Hempstead and Bodham were the most obtained in one day's shooting anywhere about here.—*G*.

Redbreast.—A light buff-coloured variety was killed at Caistor, near Yarmouth, on the 6th.

Purple Sandpiper.—Between the 3rd and 7th of this month five specimens of this sandpiper were shot at Beeston, near Cromer, and, though in close vicinity to the sea, are stated to have been found on the margin of a small pond of fresh water, a rather unusual locality, surely, for this species? Another specimen, shot at Burgh, near Yarmouth, was also sent up to Norwich on the 6th. These proved to be males, and were all, more or less, in immature plumage. An adult bird was shot at Stalham on the 13th.

Whooper.—On the 6th a fine old bird was shot in Blakeney Channel, an unusually early appearance on our Norfolk coast.

Redthroated Diver.—A specimen killed on the 11th, though in immature plumage, showed traces of red feathers coming on the throat.

Gannet.—A beautiful adult bird was shot near Cromer during the first week of this month.

Hen Harrier.—An adult female killed on the 10th.

Peregrine.—A very fine young female was shot at Hellesdon, close to Norwich, by a man who was waiting for wood pigeons in

a small plantation. The peregrine dashed through the tops of the fir trees at the pigeons, and was killed in the act. An immature male was shot near Yarmouth about the 20th.

Little Gull.—A young bird was killed on Horsey Mere on the 21st, and most probably others have appeared off the coast, though not driven in by stress of weather. Even in its immature dress it had a rich rosy tint on the breast-feathers.

Waxwing.—A single adult male, with seven wax tips to each wing, was shot at Burgh, near Yarmouth, about the 23rd—the only one, this winter, that has come into our birdstuffer's hands.

Glaucous Gull.—An immature bird was seen in Leadenhall Market on the 24th, by Mr. J. H. Gurney, said to have been sent from Yarmouth.

Richardson's Skua.—On the same date as above Mr. Gurney also saw, in Leadenhall Market, a nearly adult example of this skua, killed off Yarmouth.

Pomarine Skua.—On the 25th an immature specimen was shot at Yarmouth and sent to Norwich the same evening. A somewhat older bird was killed, quite inland, near Hingham, about the 18th.

Redbreasted Merganser.—On the 28th an adult female in Norwich Market.

Merlin.—An adult female shot on the 21st.

Goosander.—November 2. A male shot near Lynn.

"*Paget's*" *Pochard*.—During the early and severe frost that occurred at the beginning of this month, when even the waters of our largest and deepest broads were "laid" across, a specimen of this wild hybrid between the white-eyed pochard (*Fuligula nyroca*) and the common pochard (*F. ferina*) was killed, amongst a number of "cripples," on Hickling Broad, on the 13th, and two similar birds are said to have been seen at the same time. This specimen proved to be a male, on dissection, as were the two previous examples killed in this county (an immature male at Rollesby on the 27th of February, 1845, and an adult male at Little Waxham on the 24th of February, 1859). The present bird, in nearly adult plumage, resembles the Waxham specimen, and, like both the previous ones, more resembles the Nyroca duck in form and colour than the pochard, a rich chestnut predominating upon the head, neck and breast, with an entire absence of black. When fresh killed the eyes were white, with a slight tinge of lemon-yellow. For a notice of the two previous Norfolk specimens, of two

purchased some years ago in the London market, and of a pair taken near Rotterdam in April, 1850, see 'Zoologist' for 1859 (p. 6536).

DECEMBER.

The early and severe frosts which occurred at the beginning of November brought great quantities of fowl to our coast, and the usual large flocks of redwings and fieldfares, with snow buntings, bramblings and other finches; but these, owing to the severity of the weather, soon passed on to the southward. Tufted ducks were very plentiful, and a few adult male goldeneyes, rarely seen till later in the season, were observed amongst others on the frozen broads. A single whooper swan was killed at Blakeney as early as the 6th of November, and after a heavy fall of snow on the 17th our market presented the ordinary aspect of mid-winter, from the number of wood pigeons, lapwings and gulls (chiefly blackheaded) that were exhibited for sale. December followed suit with a very heavy fall of snow on the 7th, drifted in some places to a considerable depth, which, though protecting vegetation from the intense frost that continued with little abatement for some days, proved "hard times" for the birds of all kinds, both inland and on the coast. The cold experienced on the night of the 7th, when the thermometer fell below zero, was not exceeded at any time during the severe winter of 1870-71. Partridges, both English and French, killed out of the fences, were now plentiful in the market, with large bunches of dunlins and other *Tringæ*; trays full of greenfinches, mostly male birds, chaffinches, thrushes, redwings and larks, showed the gunners were busy, but neither sportsmen nor collectors benefitted much. The winter had begun too soon and was too *suddenly* severe. Our northern visitants, when thus overtaken before the usual period, proceed southward at once, and rarely return till the spring, and the wild-fowl, snipes, and even the coots, frozen out, left the broads altogether, and most of them the coast and salt-marshes. At this time large flocks of wild swans were observed passing over, and geese of various kinds were seen on the wing or feeding warily in the open country, but very few were procured, and adult goosanders, mergansers, and other rare fowl, have been "conspicuous by their absence," both in our markets and bird-stuffers' shops. Siskins have been extremely scarce, and no mealy redpolls have been taken by the birdcatchers.

Gulls.—A surprising number about the fields between South Walsham and Cromer: they appear to consist chiefly of common gulls, with blackheaded ones and a few of the larger herring. They do no harm, but a solitary and immature great blackback was hung up as a scarecrow, as a warning to the rooks.—*G*.

Peregrine.—December 1. A peregrine, which had been seen by the keeper at Northrepps on the 25th of November, was again seen by him, in the evening, to swoop down on a covey of partridges.—*G*.

Smew.—Mr. Pashley informs me that he saw a flock of seven at Cley.—*G*.

Bullfinch.—On the 13th a melanism of the female bullfinch was caught at Bealough, which I purchased of Mr. Gunn. The body of it is very dark brown and all the head pure black. It is not the first capture of a wild melanism of this species in Norfolk (cf. B. of Norf. p. 234).—*G*.

Hen Harrier.—On the 23rd an adult male was shot at Hickling. It is to be hoped it was a migratory specimen, and not one of two pairs that nested there last summer, and which were creditably spared by an amateur collector. The specimen retains a little brown upon the occiput, and the back is not yet of a pure gray.—*G*.

Magpie.—A magpie was shot at Hempstead, where they are not uncommon, on the 12th.—*G*.

Purple Heron.—A very young female purple heron, in good condition and in an interesting state of plumage, was shot at Horning, on, I believe, the 4th, on which day a snowy owl, already recorded (Zool. S. S. 2912) was shot at Southrepps. The specimen was taken to Mr. T. Roberts, of whom I bought it: he found in its stomach two mice. Only two occurrences are mentioned in the 'Birds of Norfolk' in the last thirty-nine years, which shows how rare this species has become, like the squacco heron, the night heron, &c., which were all most plentiful fifty years ago, judging from the records which remain to us, and which are all given in the work just quoted.—*G*.

Jackdaw.—In the fields at Northrepps, with rooks or singly, where it may be known by its size, voice, and wavering unsteady flight.—*G*.

Whooper.—Some wild swans seen at Ranworth the last week in this month were probably whoopers.

Bearded Tits.—December 30. A small flock of bearded tits seen at Ranworth, but it was too windy for them, and the reeds are too dense to get a good view. They are said never to come into the smaller broad of South Walsham adjoining.—G.

Starling.—Within a few yards of Mr. Jary's house at Burlingham is the largest starling-roost I ever saw, in a laurel shrubbery. They begin to pour in about four o'clock in the afternoon, and no amount of shouting will drive them away. The noise and mess they make is something altogether unusual.—G.

Coot.—An utter absence from the broads of coots, which left Ranworth, South Walsham, Hickling, Breydon and Rockland, when the frost set in. Mr. Lubbock says, "A broad entirely devoid of coots would be London without sparrows, or Newcastle without coals." The marshmen appeared to think it an unusual thing, and the annual coot shooting at Hickling has had to be put off in consequence.—G.

Brent Geese.—A few young birds in Norwich Market on the 2nd.

Wigeon.—A pinioned bird, which had been kept on the same water at Hoveton for eighteen years, died on the 18th of this month.

Quail.—An old female shot at Whinburgh on the 9th.

Merlin.—A very beautiful adult male was shot at Plumstead, near Norwich, on the 8th.

Bitterns.—As usual in severe weather, several were killed during this month. One was shot at Plumstead on the 8th; one at Hickling on the 5th; and another at Colney, within three miles of Norwich, on the 11th.

Green Sandpiper.—One killed about the 9th during severe frost.

Great Northern Diver.—An immature bird was killed on the coast early in the month, and a young male at Lynn on the 10th: this bird had the lower mandible three-quarters of an inch shorter than the upper, probably from an injury when very young. Several observed off the coast, as well as redthroated divers.

Pied Woodpecker.—An adult male was shot at Blofield on the 5th, and an adult female at Hoveton on the 15th.

Bean Goose.—Several examples of this species, which was hard to procure in the severe winter of 1870-71, have been killed in different parts of the county. One killed at Potter Heigham on the 22nd had several white feathers round the base of the bill: it weighed nine pounds.

Montagu's Harrier.—A fine old male of this species was seen to alight on the ground in a small plantation at Eaton, near Norwich, on the 21st, and was recognised by its small size and general plumage as it rose with something in its claws. On the further side of the covert the bird was shot at, but unfortunately escaped with a broken leg. A redwing, quite warm and bleeding, was picked up close to the spot, no doubt dropped by the harrier when wounded.

Goosander.—Two young females killed near Yarmouth about the 14th.

Bernicle Goose.—An adult male and female of this species were purchased in Norwich Market on the 29th. These birds were not met with on our coast at all last winter, in spite of the long and severe frosts, and it is nearly ten years since any have been seen either in our market or birdstuffers' shops.

Whoopers and Bewick's Swan.—But one Bewick's swan has appeared in the Norwich Market this winter, on the 9th, and no whoopers, and only two of the latter were exhibited for sale at Lynn during the early frost.

Ornithological Notes, chiefly from Devonshire, during the Autumn and Winter of 1871-72. By JOHN GATCOMBE, Esq.

Martin.—On the 28th of September I observed martins feeding their young, which had not left their nests, under the eaves of a house in a village near Tiverton, in Devonshire.

Robin.—Witnessed a fight between two robins, which were so desperately engaged and tumbling about on the ground, that my little dog, making a rush, actually seemed to separate them with his nose before they flew off, and I only wonder that he did not kill them both.

Geese diving.—When walking by the River Parret, in Somersetshire, I watched a flock of five tame geese, which were constantly diving and keeping down for nearly a quarter of a minute at a time. Sometimes they were all under water together. I do not remember having noticed an instance of the kind before.

Phalarope.—Very scarce during the past autumn. Only one has been observed in Plymouth Sound, where they are sometimes so plentiful.

Purple Sandpiper.—On the 2nd of November I watched two purple sandpipers on the rocks: as is usual with this species, they

were exceedingly tame, and would not rise until a stone was thrown at them.

Razorbills and Guillemots.—Razorbills were particularly plentiful in Plymouth Sound this winter, which I hope might be accounted for by the working of the Sea-bird Act; and I only wish something could be done to prevent so many guillemots being destroyed by the mackerel fishermen in the spring, for it is really distressing to see the numbers they bring on shore in their boats, both dead and alive. These unfortunate birds get what is termed “meshed” in the long drift-nets. I have seen full fifty in one boat, many of which were alive, and apparently not in the least injured. The living birds, I am sorry to say, instead of being set at liberty, are carried about by boys in the streets for sale, and allowed to die a miserable and lingering death. I have myself, from time to time, bought many of these poor birds, just for the pleasure of letting them go; but constantly doing so I find rather expensive work. It is very strange that, among many hundreds of these guillemots examined by me, I have been able to find but three or four of the ringed or bridled species, and comparatively very few razorbills are found among them. Most of the guillemots caught are in full breeding plumage.

Shags.—Shags are becoming far more plentiful on our coast than they have been for many years. This species may be easily known from the cormorant, when on the water, by its manner of diving: when going down it gives a kind of leap, as if to give its body an impetus. I have seen dusky grebes do this, especially in a tideway or in deep water.

Northern Diver.—On the 15th of January I watched a northern diver, with a pocket telescope, for full ten minutes, struggling with an eel or very large pipe-fish, which it was trying to swallow, diving with and shaking it as a dog would a rat. Being held by the middle, the fish would writhe and twist itself into all manner of shapes, sometimes in the form of a hoop. Once a passing kittiwake made a stoop at it, but the wary diver was under water in an instant. I have watched a northern diver struggling with a large flat-fish for nearly an hour, and which I think it must have got rid of at length piecemeal. On the 19th I watched a northern diver, which invariably kept its mouth open for some seconds before going down, and I have also observed a razorbill do the same thing.

Gannet.—On the 16th of January some fishermen brought in a fine gannet, which had been caught with a line and hook baited with the half of a herring.

Redthroated Diver and Blackheaded Gull.—On the 20th of January I walked many miles along the coast, and observed one redthroated diver and some hundreds of blackheaded gulls, in flocks, resting on the water just outside the breakers. On one occasion a whole flock suddenly rose and flew direct to a field in which a man was ploughing, and after hovering round him for awhile began to dip and alight in the newly made furrows, picking up the earthworms turned up by the plough. Near the same field I once shot a kittiwake, which brought up a mass of earthworms nearly as large as my fist.

Cormorant, &c.—There were also, on the 20th of January, a great many cormorants and shags to be seen fishing and drying their wings on the rocks. On the 23rd I saw two northern divers, many razorbills, and one guillemot near the entrance of the Hamoaze.

Kittiwakes.—Many ornithologists have an idea that the kittiwake is only a summer visitor to our coasts, but with us it is met with in autumn and winter, and at the present time it is very numerous. Of all the British gulls the kittiwake is by far the most tame, and least able to bear storms or severe weather, during a continuance of which they are often picked up dead or exhausted on the land, sometimes even in the middle of towns. Only a few days since, during a severe gale, a kittiwake alighted in the street, just before my door, and was caught by some very small children. It is also very fearless, and will attend on the fishing-boats so closely as to almost take the bait from the fishermen's hands. A curious circumstance happened to myself and some friends when on the water shooting some years since. A kittiwake being fired at and struck very hard by one of the party immediately dropped a fish, and, fluttering with difficulty away for about two hundred yards, settled on the water. We, of course, kept an eye on this gull, fully intending to pick it up; but, strange to say, a little time after, when every gun in the boat had been discharged at other gulls, to our great astonishment, up got the wounded kittiwake, and, flying slowly and deliberately towards our boat, stooped down and picked up the fish it had dropped close to the side, and flew steadily seawards until out of sight. I shall never forget the disappointed look

of one of my friends, who, striking at the bird with his empty gun, exclaimed, "Well! I call *that* impudence!" A few years since I saw a flock of kittiwakes tugging and pulling at some long seaweed attached to the rocks, lifting it completely out of the water, as if trying to fly off with it. During these prevailing gales the boys about the Plymouth quays have caught and knocked down many kittiwakes with stones.

Cry of Divers.—Mr. G. F. Mathew, in his interesting "Ornithological Notes" (Zool. S. S. 2917), remarks on the extraordinary action displayed by a blackthroated diver when fired at. I have had some experience in diver shooting, and have *invariably* found that when a diver thrusts forward its neck on a level with the water, in the manner described, that it is *mortally* wounded, and is sure in a short time to float dead on the surface. I have also heard redthroated divers utter their melancholy cry when wounded, even after having been taken into the boat. This cry is very similar to that made when calling to each other on the water or flying overhead. Razorbills often croak loudly when wounded. With respect to the cry of the diver, I will mention a circumstance which happened to myself when quite a boy, and one which I shall never forget. Observing a large northern diver fishing in a rather small bay, and having a gun with me, I managed to get together a crew of small boys, gave chase in a boat and knocked it over, apparently, quite dead on the water. We then got it into the boat, and laid it out with great care on the stern seats. On landing I took the bird by the legs, and proceeded to carry it home in great triumph; but, to my horror, when going through the town, it seemed to quite recover, and persisted in uttering its mournful cry all through the streets. Being followed by a large crowd expressing pity for the poor bird, and crying, I fear, "shame" upon me, I did not know what to do, but would gladly have put it into the water again had it not been severely wounded in the head and neck. Wishing to get home as quickly as possible under the circumstances, the constant stoppages I was subjected to from people who wanted to know the name of the bird annoyed me exceedingly; and when I told them, the answer was, "Northern diver! oh, what a shame!" Among the people who inquired was a Polish count, who not being able to speak or understand English well, could not comprehend the word "diver," but still persisted in knowing; when, after making all manner of motions with my hands to represent diving,

I luckily thought of the French name "plongeon," which satisfied him immediately. This bird was rather a large specimen, weighing eight pounds and a quarter. I was once much amused when carrying a glaucous gull through the town, on overhearing the names given to the bird by different persons—one saying it was a pigeon, another a wild duck, one a shag, and another a woodcock; but, to crown the whole, just before I reached home, a little boy calling to his companion, exclaimed, "Look here, Bill, that gentleman has shot a *geese*!" Whilst on this subject, I may mention an instance of the fierceness and pugnacity of the redthroated diver, which came under my own observation. Having heard that a person in Plymouth had a diver confined alive in a box, I immediately went to buy it in order to set it at liberty; but the instant the man raised the lid out struck the diver at his eyes, lacerating one severely. However, I secured my bird, carried it down to the sea, and had the pleasure of seeing it dive away, as if nothing had happened.

Redwings.—Strange to say, I too observed the large flight of redwings on the 1st of November, mentioned by Mr. Mathew in his "Notes." On the Tothill Road, near Plymouth, the hedges, trees and fields were quite alive with them, but I did not see any fieldfares.

J. GATCOMBE.

Durnford Street, Stonehouse, Devon,
February 6, 1872.

Notes on the Gouliot Caves in the Island of Sark.

By the Rev. F. A. WALKER, M.A.

THOUGH several years have elapsed since I visited the Gouliot Caves, the impression that they, and the wonderful marine productions which they contain, created, has never been effaced. Owing to the fact that the entrance to these caverns is situate at the extremity of a headland, the tide scarcely ever, except during the equinoxes, recedes from the opening sufficiently to admit of ingress. The opening of the first cave which we visited, and the largest, is about fifteen feet in height. Inside is a large rocky chamber, some sixty feet from roof to floor, and great boulders piled up within. As the sea surrounds these places on two sides, on proceeding to the further end I obtained a very pretty view of the cliffs and sea;

and, on looking back through the dark rock, beheld a fine effect of the sun playing on the blue waters, through the opposite aperture. On the right hand, too, going in, there is a dark passage branching off and communicating with the sea. The tide flows a good way into the interior, and here also the look of the sunbeams on the waves at the further end of this gloomy corridor of Nature is exceedingly picturesque.

The walls of the great cavern are completely covered with a large species of barnacle, red and green sea anemones (such as are ordinarily known as "strawberries"), bright orange sponges, &c. What constitutes its peculiarly curious and interesting character is that the tide rising to the height of forty-one feet within, an idea may be formed of the appearance of the rocks at a considerable depth below the sea, as well as of the natural objects that stud their sides, by inspection of the rugged walls of this vaulted chamber. It is a splendid place, but this was only the first I saw.

Above our knees in water, and the tide running strong, we waded to a second. The spot I now beheld was beautiful to look at; the sides of the cave were completely covered in parts with clusters of the *Tubularia*, expanding their delicate arms and feathery mouths; in others with bright yellow and orange *Actinias*, of large size and in great numbers, true flowers of the deep, resembling in their shape large *Alamanda* blossoms, some expanded, others closed. Having visited other passages and collected some uncommon sorts of sponges, we retraced our steps, as Elias Gill, the guide, well acquainted with the sudden approaches the tide makes to these caverns, warned us of its rise.

On our second expedition to the Gouliot, we took a boat at the foot of the cliffs to visit some rocky passages that can only be approached by water. It was here that I found some scarce sponges and *Grantia compressa* and *G. ciliata* in plenty: these last are small and delicate species, like ivory tassels, adhering to the ends of the sea-weed, and conspicuous far below the surface of the pellucid waters in which our boat was heaving with the strong current. We had to make a sudden snatch at the sponges and then withdraw our hand as rapidly, to prevent its being crushed between the cliff and the side of our small bark. Live oysters were adhering to the rock; the *Aphrodite*, or sea-mouse, with its green and purplish iridescent hairs, was to be met with, as also the sea-slug, from which the dye is obtained: brought home and placed in a

basin of salt water it died in the night, staining the water with a deep carmine.

The above is a faint attempt to delineate the marvellous treasures of the deep, and the effects of light and shade in these chambers, so difficult of access, and withal so well repaying investigation.

F. A. WALKER.

15, Robert Street, N.W.,

February 5, 1872.

Ten Female Puppies in a Litter.—I do not know whether the following cutting from 'Pulman's Weekly News and Advertiser,' a West Somersetshire paper, published at Crewkerne, is worthy of insertion in the 'Zoologist':—

"Crewkerne, February 5, 1872.

"Sir,—My pointer gave birth to ten puppies on Friday last. They were *all of the female sex*. Can any of your readers mention a similar circumstance? And is it not rather extraordinary?—Yours obediently, T. E. D."

I know the gentleman whose initials are "T. E. D" in the letter.—*C. W. Penny; Wellington College, Wokingham, February 13, 1872.*

[I think it a most extraordinary event.—*E. Newman.*]

Birds attracted by Lighthouses.—In February, 1871, I received the following birds, in spirits, which had killed themselves against the "Owers" light-vessel off Selsey Bill (West Sussex) during the preceding autumn and winter:—Two storm petrels, two fieldfares, a robin (doubtless a migrant), a dunlin and a redwing; and I have since received a sedge warbler, a greater whitethroat, two wheatears, a jack snipe, and another storm petrel. Larks and starlings I told my correspondent that I did not care about. As it is not often the ornithologist sees birds in the flesh which fly against light-houses,—they being invariably cooked or given to the cat,—a record of the above may be worth making.—*J. H. Gurney, jun.; Northrepps, Norwich.*

Ornithological Notes from Guernsey (*continued from Zool. S.S. 2911*).—Altogether my notes this month are very meagre, and not particularly interesting. One or two things, however, have occurred which are perhaps worth noticing. The first of these is that in the field close to the house I observed a flock of starlings on the 6th of December. Starlings are never very common here, and are generally seen in the country. The only cause I can think of as sending them so far into town is the great cold there has been (for Guernsey), and in the town it is generally warmer than in the country: they stayed for many hours, and at last started, going northward. On the 10th of December I saw, at Couch's shop, some common herons,

which had been shot here. January, 1872.—This year begins with very little. The weather is very warm, and on the 11th there was quite a concert of the birds. Blackbirds seem in full song. It has been very wet, and I have been much amused at the house sparrows: they seem to dislike wetting their tails, for they stick them nearly straight up into the air when hopping on the damp grass. During the last week of this month a shag was shot with a splendid crest: the plumage was the peculiar shining green; altogether it looked as if it was in full summer plumage. And now farewell, a long farewell, to all our sea birds. Since Mr. Cecil Smith sent you his Guernsey Ornithological Notes the Bird Act has been passed. The “close time” extends from the 1st of February to the 1st of October, the idea being that the sea birds breed here earlier than in England. Allowing this I should have thought that the breeding season would have been over the earlier, and that therefore the 1st of August would have been more than long enough. Mr. Cecil Smith’s remarks about the museum I quite agree with; but unless the Bird Act can be altered, I do not see the good of starting the ornithological part afresh; and I only regret that the museum had not been started before the Bird Act had been passed, for then the “open time” might have been longer. Now the only thing one has to look forward to is the arrival of the cuckoo.—*C. B. Carey; Candie, Guernsey.*

Abnormal Colouring in Birds.—To-day I have seen some very curious freaks of Nature in the following birds:—Two white linnets (*Linota cannabina*); a fawn-coloured hedgesparrow (it is very rare to find variety in this species); a bullfinch with a nearly white back, and the rest of the plumage of the usual colour; and a house sparrow with the upper mandible projecting a quarter of an inch beyond the lower one. I have purchased them for my collection. I also saw a white sky lark. All these birds have been killed in the county.—*J. Whitaker, jun.; Ramsdale House, Notts.*

Whitetailed Eagle in Gloucestershire.—A specimen of the whitetailed eagle was shot about the end of December last at Doddington Park, Gloucestershire, the seat of Sir Gerald Codrington, and was examined by me at Mr. Wheeler’s, birdstuffer, of this city, where it had been sent for preservation. It was a male bird in immature plumage (apparently a bird of the year), and in good condition, and measured two feet eleven inches in length. I have not heard of the previous occurrence of this species in Gloucestershire, although in the adjoining county of Somerset it has occasionally been captured.—*Marcus S. C. Rickards; 37, Cornwallis Crescent, Clifton, February 17, 1872.*

Ospreys in Hampshire.—On the 13th of February, Ford, the warden, informed me that two ospreys were fishing at Fleet Pond, a sheet of water over one hundred acres in extent, in the Government lands. He went down about eleven in the morning to drive the swans off the pond, which collect

there in great numbers, sometimes ten or twenty at a time, and are supposed to destroy the fish-spawn. The ospreys were circling over the water and constantly plunging for fish: he watched them dive over twenty times; the effect he likened to a cannon-shot striking the water, but never saw them emerge with a fish. Ford has not seen an osprey at Fleet Pond for four years. Is not February early for them to be moving northward? Large flocks of wild ducks and wigeons frequent this pond in autumn and winter: they remain all day in the centre, well out of gun range, and never allow a boat to approach within a hundred yards of them. On this morning Ford says that all the ducks seemed perfectly terrified by the ospreys wheeling overhead, and, instead of taking flight from the pond, contented themselves with diving when he approached them in a punt. I got down about three in the afternoon, with a gun, not with a desire to shoot the ospreys, but to try and immolate some of the ducks: however, the fish-hawks had gone, and the wild ducks had quite recovered their wits. I fired a long shot at three redbreasted mergansers, but did not kill. It is a fine sight to raise a flock of ten or a dozen noble swans from this pond. I get within eighty yards of them in a punt and fire a blank charge, then with tremendous flapping and commotion the flock rises; for about twenty strokes of the pinions the huge birds flap the water, and seem to derive an impetus from the contact; then they lift themselves up and circle round the pond, at times in a V figure, at other times in single file: after a few circles they head away to the valley of the Thames, or in a westerly direction towards Dagnersfield, where there is a large sheet of water. Is there any penalty attached to killing wandering swans on water where one has the right of shooting? not that I have any murderous intention towards these poor birds, but I have an idea that they are protected by some old Act.—*H. W. Feilden; Aldershot, February 15, 1872.*

Abundance of Shorteared Owls in Nottinghamshire.—A great number of shorteared owls have been sent to be preserved this season: one man tells me that he has had about twenty: they have been generally sent in pairs.—*J. Whitaker, jun.*

White's Thrush.—The very valuable note of Mr. Gurney respecting this bird, in the last number of the 'Zoologist' (S. S. 2940), will, I hope, lead those gentlemen who are fortunately in possession of White's thrushes to count the number of tail-feathers they contain. If each of them is found to have fourteen tail-feathers, then the question of variety is settled, as the missel thrush certainly has but twelve. I myself think the bird a variety of the missel thrush, but, as I have not seen a White's thrush, I ought not to be allowed to express any opinion, yet I think Mr. Gould's figure in his magnificent work on the 'Birds of Great Britain,' rather strengthens that opinion. Have two White's thrushes ever been found together in any country?—*F. Boyes; Beverley.*

On the Gregarious Roosting of the South-African Colies.—The very curious habit recorded in the 'Zoologist' (S. S. 2943), by the Rev. Murray A. Mathew, of the gregarious roosting of the longtailed tits, has an interesting parallel in the habits of the three South-African species of the genus *Colius*. The following is a translation of Le Vaillant's account of the roosting of these birds, as given in his 'Oiseaux d'Afrique' (vol. vi. p. 32):—"They assemble in the same bush to roost, and it is singular that they sleep suspended from the branches, with the head downwards, and that they then press so closely one against another that they form a mass comparable to the swarms of bees which one may see suspended like balls from the branches of trees." Mr. Layard confirms this statement, from report, in his 'Birds of Africa' (p. 221), and Mr. Ayres, from personal observation of *Colius striatus*, in the 'Ibis' for 1864 (p. 359).—*J. H. Gurney; Marlton, Totnes, January 31, 1872.*

Clustering of the Longtailed Tit.—I can fully corroborate what Mr. Mathew says as to the clustering of the longtailed tit. The most remarkable instance of it which I ever heard of occurred at Blackwell, near Darlington. A birdstuffer named Noble saw on a fir tree what he thought was a pheasant: he fired at it, and immediately the mass dissolved into more than a score of longtailed tits: he told me that he thought he killed a dozen of them. That this habit was not overlooked by Yarrell appears from the following statement in his 'British Birds':—"The young family of the year keep company with the parent birds, during their first autumn and winter, and generally crowd close together on the same branch at roosting time, looking when thus huddled up like a shapeless lump of feathers only." (B. B., 1st ed., vol. i. p. 346.)—*J. H. Gurney, jun.; February 1, 1872.*

Waxwings in East Yorkshire.—On the 3rd of November last an adult female waxwing was shot, by Mr. James Runton, out of a flock of birds at Aike, a township some few miles from Beverley. He said that seeing a flock of small birds on some hawthorn bushes, he fired a shot at them, and the result was the death of the above bird; but whether the flock was composed entirely of waxwings, or whether this was the only one amongst them, he could not say, nor did he know what the bird was until he came to Beverley a day or two following. There were also shot, on the 25th of January, two others, male and female, at Burton Agnes, near Burlington: these latter were both immature, and were accompanied by a third which escaped. The crops of all three contained haws.—*F. Boyes.*

Snipe "Drumming" on the 2nd of February.—Crossing a moor in the neighbourhood on the 2nd instant, I was surprised to hear a snipe "drumming." I do not remember ever to have heard this at so early a date before. In my snipe-shooting days the first "drumming" of a snipe was the signal for ceasing to shoot: the average time for this was about the

last week in February, though in one season (1853) the first "drumming" snipe was heard on the 16th of March: this was, however, the latest date I have ever recorded for the commencement of that peculiar sound.—*O. P.-Cambridge; Bloxworth Rectory, Blandford, February 8, 1872.*

Snipes "Drumming" in Winter.—On the 5th instant, whilst on the look out for wild ducks at "flight," I heard a snipe "drumming": this is not very unusual, as I have on several occasions heard them drumming in winter, but always at dusk. I have noticed that whilst drumming at this season they never utter the note "ca, ca, ca, ca, ca" when ascending, which they invariably do in the summer. All observers will know the note I mean.—*F. Boyes; February 17, 1872.*

Virginian Collin in Nottinghamshire.—Since my notice of a Virginian collin having been shot near Nottingham, another specimen has been killed near the same place. They were both, to all appearance, wild birds.—*J. Whitaker, jun.*

Bittern in East Yorkshire.—An exceedingly small and prettily marked variety of the common bittern was shot, by Mr. George Harland, at Sunk Island, in this Riding, on the 1st of December last. It was seen squatting in a ditch, and refused to rise until "kicked" up. I was unfortunately unable to get the weight or measurements, as it had been mutilated to make into a "screen" before I saw it. I, however, examined the stomach, and found it contained the remains of several beetles. The bird was a female.—*F. Boyes; January, 1872.*

Razorbills, Guillemots, &c., picked up in the Isle of Wight.—It is a long time since I sent you a note for the 'Zoologist,' but the unusual number of birds that have been picked up on our shores during the last month is such an extraordinary occurrence that I cannot pass it by. After the very severe storm in January our shores from Compton Bay to Watcombe Bay were lined with razorbills, guillemots, &c. I had upwards of a hundred brought to me between the 25th and 31st, most of them in very bad condition, and had evidently perished thus for want of food: not one of those that I skinned had a particle of fat upon them, whilst at this time of the year they are generally loaded with fat. I also obtained two puffins: these are the only two specimens I have ever obtained in the winter during the twenty-eight years I have collected. Seven gannets have been picked up and brought to me: this I consider very remarkable: we do get occasionally a specimen in very hard winters, but for seven of these powerful birds to be driven dead upon our shores shows the severity of the storm. It will be interesting to learn if these birds have been driven in like manner on other parts of the English coast, or whether they—*viz.* razorbills, guillemots and puffins—were congregating here at the great breeding-place when the storm arose that destroyed them in such numbers.—*H. Rogers; Freshwater; Isle of Wight, February 18, 1872.*

Razorbills, &c., picked up on the Coast of Cornwall.—The south-eastern shores of Cornwall have been covered with the dead bodies of various birds during the present month. In a walk of about a mile last week I numbered no less than sixty-nine dead bodies of razorbills, in various stages of decay, some of them very recent, whilst most of them were so far gone that it would have been difficult to recognise them were it not for their bills; but there could be no doubt of their identity. This state of things I know extends for upwards of ten miles; and when we consider the great numbers that have been carried away for the purpose of making plumes for ladies' hats, and others that did not come ashore, I think we may safely conclude that thousands of the above-named species of birds have perished in this immediate neighbourhood within a fortnight; and if such has been the case in other parts of England, how vast must have been the mortality amongst them! During the same walk I also found eight guillemots, four gulls and a gannet. I do not know how to account for this destruction amongst sea-birds, as the bodies do not appear so much emaciated as to lead one to suppose they died from starvation; yet, on the other hand, there are reasons to suppose, from the great tameness of other sea-birds, that such was the case, as on Tuesday last a gannet was seen on the rocks near here, which allowed a young man to approach sufficiently near it to enable him to knock it down with a stone: it was brought to me, and I found it in excellent plumage, but very thin in flesh. I have also heard from fishermen that whilst out on the fishing-ground the gulls will come up close to the boats and take garbage from their hands: I believe this to be authentic.—*Stephen Clogg; Looe, February 20, 1872.*

[This morning (February 21st) I met a man going over London Bridge with a clothes-basket full of razorbills; he could not, or would not, tell me how he came by them, but, by the blood on their plumage, I think they had come by a violent death.—*Edward Newman.*]

Pomarine Skuas in Torbay.—In my note on the above (Zool. S. S. 2946) I made a slight error, in consequence of misunderstanding the information which was given me. The adult specimen there mentioned I now find was killed in Torbay some years since. The four killed on the 26th of October last were, two in the first and two in the second year's plumage. This correction is not very important, but I am desirous of making it for the sake of accuracy.—*J. H. Gurney.*

Frogs and Spiders.—In my "Jottings on Snakes" I mentioned the fact that frogs had been known to catch birds, and I gave several instances which had come to my notice. This evening I was looking through Mr. Blockmann's translation of the 'Ain-i-Akbari,' by Abul Fazl-i-Allámí, which gives an account of the great Akbar, and amongst the sports in which that

Emperor indulged was that of frogs, who, says the author, "may also be trained to catch sparrows. This looks very funny." He adds, "His Majesty, from curiosity, likes to see spiders fight, and amuses himself with watching the attempts of the flies to escape, their jumps and combats with their foe." He then quotes:—

"I am in the power of Love: and if I have thousands of wishes, it is no crime;
And if my passionate heart has an (unlawful) desire, it is no crime."

"And, in truth, his Majesty's fondness for leopards is an example of the power of love, and an instance of his wonderful insight." The historian may thank Abul Fazl for having preserved this little trait of Akbar's character. In several places in the 'Ain,' Abul Fazl tries hard to ascribe to his Majesty higher motives, in order to bring the Emperor's passion for hunting in harmony with his character as the spiritual guide of the nation. But, as higher motives were insufficient to explain the fancy which Akbar took in frog and spider fights, Abul Fazl has to recognise the fact that peculiar leanings will lead even a sensible man to oddities and to actions opposed to the general tenor of his character.—*C. Horne; February 8, 1872.*

Muller's Top-knot at St. Leonard's.—About a month since a very good specimen of Muller's top-knot (*Rhombus hirtus*, Yarrell) was taken on the beach in a slight depression by a bay. It was nearly six inches in length, and so like Yarrell's figure of it (*Brit. Fishes*, vol. ii. p. 243) that it might have been taken for the original specimen. It is evidently very rare, as neither the fishmongers nor the fishermen knew it.—*J. S. Bowerbank; 2, East Ascent, St. Leonard's-on-Sea, February 21, 1872.*

Large Whiting near Penzance.—For the last fortnight, weather permitting, our fishermen have been taking very large whiting, nearly as large, on an average, as they usually run on the whiting ground off Polperro, in East Cornwall, where are usually taken the largest whiting. I received one last week, taken in our bay, two feet one inch and a half over all and one foot ten inches and a half from eye to fork. Unfortunately the fisherman who brought it to me had, in his kindness, gutted it, and so I could not take its girth or weight. It was, out and out, the largest whiting I ever saw.—*Thomas Cornish; Penzance, January 24, 1872.*

Silver Eel of Extraordinary Size.—By the kindness of Mr. Augustus Smith, of the Scilly Islands, I have received a silver eel (*Anguilla acuti-rostris*), taken in his fresh-water pond at Tresco, Islands of Scilly. It is three feet six inches and four-tenths in length over all; greatest girth nine inches and four-tenths; and weight, turning the scale at six pounds eight ounces. Its size is something altogether unprecedented in the West, although I see it has been taken of much larger size elsewhere in England.—*Id.; February 3, 1872.*

Notices of New Books.

Bird-Life. By Dr. A. E. BREHM. Translated from the German by H. M. LABOUCHERE, F.Z.S., and W. JESSE, C.M.Z.S. London: John Van Voorst, 1, Paternoster Row. Parts I. to IV. Price 2s. 6d. each.

THIS is the fourth of those important serials which I enumerated in the August number of the 'Zoologist' for last year as evincing the spirit of enterprise now so prevalent among our ornithologists and publishers. Making little pretence to novelty, and none to originality, this translation comes before us with an avowed object, that of introducing the study of Nature to the youth of our land in an agreeable and attractive form. This object is best explained by the leading paragraphs of the Prospectus, which are as follows:—

"In these days, when Natural Science forms more or less a necessary portion of the education of the youth of our time, the universal adoption of such studies may be materially aided by the manner in which its various branches are brought before the public. First and foremost, to win your pupil's willing attention let his introduction to Nature be through as bright a channel as lies in your power: by this means you develope a love for the study itself, which will materially assist the student in attaining to the higher branches of the Science. Should deep study not be the object, still we cannot but firmly believe that the perusal of a work of such a character will have a beneficial effect upon the reader, especially the youthful; some study of Nature rarely fails to soften the heart and refine the mind.

"It is with the view of carrying out the above idea that the translators have essayed to produce a readable translation of Dr. Brehm's charming book—a work so calculated to foster a taste for Natural History in the minds of the young, and yet of sufficient scientific value to have been most warmly received by continental naturalists."

I cannot sufficiently admire the design thus unfolded, but I am fully aware that in endeavouring to appreciate justly a work of these high pretensions I ought to have the whole, or at least a programme of the whole, in hand; and this not being the case, and having been solicited to notice the work in its present state, it will of course be seen that my remarks can only apply to Parts I., II., III., and IV., all that are at present published: hence I can pass no

judgment on what is yet to come. If, therefore, the work in its entirety, in its completed state, prove a good, a safe, a sound and a seductive guide to the student, the author as well as the translators must suffer materially by my expressing an adverse opinion of that small portion which may or may not fairly or sufficiently represent the whole. The extracts I have made from the 'Birds of Europe,' from 'Cage Birds,' and from 'Yarrell's History of British Birds,' give a perfectly correct idea of the respective works, because each work is destined to be, when completed, a collection of what Gilbert White would have called "Monographs,"* and the "monographs" I have selected, *viz.*, the kestrel, the gray parrot, the Greenland falcon, and the Iceland falcon, are most agreeable and attractive, although I doubt not perfectly fair specimens of the entire works. In the three Parts hitherto published of 'Bird-Life' there are no monographs to be selected, but each page, apart from the context, is to say the least an unsatisfactory example of the whole, because of its incompleteness. Nevertheless, I will do my best to give an intelligible and fair idea of what the work is to be.

The qualifications necessary to produce a really good translation of any work on Science are threefold; a knowledge of the subject, a knowledge of the original language, and a knowledge of the language into which it has to be translated. In the present instance I cannot compliment the translators on being perfect in either qualification: the English is at times loose and careless, the meaning of the original seems imperfectly understood and imperfectly rendered, and the translation of the vernacular names of the birds is very questionable. I will not give examples of these defects, because it would answer no good purpose, but propose to select passages which will enable the reader to judge for himself.

The following passage, implying that the fear of man on the part of the feathered creation results from experience and is not instinctive, is entirely in accordance with my own conviction; but the author does not seem fully to explain his meaning: thus, when he contrasts the conduct of the Asiatic and African adjutants, he doubtless states facts, but leaves the explanation to the reader:—

* It will be observed that the word "monograph" when applied to a species has a different signification to the word when applied to a genus, a difference on which it were totally irrelevant and unnecessary to dilate here.

“Did man but encourage the birds which seek his society, there is no doubt his company would be more diligently sought after. By nature these light-hearted creatures are not distrustful, though they may become so when their confidence is abused; they are generally on familiar terms with other animals, and approach them without fear, and man also; but, unfortunately, on nearer acquaintance with the latter they must often learn, to their cost, that danger lurks beneath an appearance of too great intimacy; and this makes them as shy as they were formerly fearless. In uninhabited regions, like the steppes or primæval forest, and on desert islands, &c., the birds which inhabit them look upon the appearance of man certainly with astonishment, though not with fear. The auks, penguins, and eider ducks, which have their abode by thousands on the icebergs of the Polar seas, allowed themselves to be caught by the hand by those sailors who first landed on their domain. The larks of the Desert used to run fearlessly into my tent. The same may be observed in all places, where birds are conscious that shelter will be afforded them. On the other hand we see just as plainly how easily their trustful natures may become changed through rude experience. The Bohemian waxwings, which in hard winters sometimes appear among us, show from their behaviour that in their northern home they either never come in contact with man, or should they do so, they are treated with kindness; and when they leave us it is with a far different opinion of the ‘lords of creation.’ Some birds appear distrustful and shy by nature; thus all long-legged birds are cautious; they avoid contact with man even in uninhabited localities, unless, like the common stork, they have been bred in his neighbourhood, I may say under his very eye, and are conscious of his friendly feeling toward them. The European black stork, however, will have nothing whatever to do with man, however much his white cousin may descant on the great advantages to be derived from the intimacy. The Marabou stork, or ‘adjutant’ of the East, parades the streets of all Indian towns, while the closely allied African form is never to be seen in one.”—P. 99.

Why is this the case: why does the adjutant feel so thoroughly fearless in India? we presume because he is protected on account of his services as a scavenger. It is probably otherwise in Africa, but this rather obvious explanation is not given.

Immediately following is a passage in which the contentious character of polygamous birds is graphically set forth, but the example scarcely meets the case, for the young cockerel in question could scarcely have been acting on the sexual impulse which impels polygamists to do battle for their harem, since the bird attacked was of a species totally different from himself.

“All birds living in a state of polygamy are overbearing and quarrelsome in the highest degree; they fight to the death, not only with their rivals in the tender passion, but also for the sake of being lord paramount; and they show the most extraordinary courage and perseverance in these contests. Lenz gives us an example of this in the domestic fowl:—In the month of May, 1839, I happened to have a hen turkey, which had just hatched off a brood of twenty chicks, and, as soon as they were fit, placed mother and youngsters in the farmyard. Scarcely were they installed in their new abode when a young cockerel, barely a year old, dashed at the turkey, and a terrific battle ensued. As long as the two birds confined themselves to flying at one another, matters were pretty equal; when, however, it came to pecking, the tide of war turned decidedly in favour of the turkey, who, from its superior height, had the advantage of being able to strike directly downwards. At last it punished the cock's head so severely that he could scarcely stir. I took him away, trusting he would have the good sense to leave the turkey alone in future, and, placing him in a quiet corner, told one of my people to keep an eye on the bird: I then left. On returning, about two hours later, the person I had left in charge told me that he had at first forgotten the birds, and found them later in the yard together. It appeared that the cockerel, leaving his corner, had again entered the yard and resumed the engagement, for he was found bleeding, and to all appearance dead, the turkey, with bloody beak, giving him an occasional extra peck. ‘I have laid him in the stable,’ said my informant. Feeling excessively annoyed, as the cockerel was an especial favourite of mine, I went to the stable, and, to my great delight, I found my poor bird still alive. Allowing him two days to recover, I again turned him down in the yard, feeling convinced that this time he would follow the old adage, that ‘Discretion is the better part of valour,’ and keep out of the turkey's way. But without a moment's hesitation the cockerel rushes recklessly at his old enemy, fighting with the energy of despair; and finally, with some assistance, and by my drawing its attention once or twice to myself, he succeeded in putting the turkey to flight. This ended the struggle; and his adversary never afterwards questioned his right to the title of ‘cock of the walk.’”—P. 101.

I may here observe that this combative propensity of males is by no means confined to polygamists; it is most prominent and observable in these because competitors are often on the spot: let a strange male intrude on the domain of a monogamist, even our redbreasted favourite, and we shall see an equal degree of pugnacity evinced.

A trait in bird character has frequently been observed, but never clearly explained; the almost abject deference which is shown by

members of one species to a single individual of another. Not only the travellers cited below, but all travellers gifted with powers of observation, have been struck by this,—Waterton, Audubon, Wilson, and many others: it is not superior strength or size or weapon, for these could avail but little against numbers.

“‘I found,’ says Sir Richard Schomburghk, ‘the striking fact confirmed, that the deepest respect was paid to the king of the vultures (*Sarcorhamphus Papa*) from the species *Cathartes Aura* and *C. Iota*; even if hundreds of these are assembled round a carcase, they immediately retire at his approach. Perched on the neighbouring trees, or, in lieu of these, sitting on the ground, they wait, greedy and envious, until their feudal lord has satisfied his hunger and has withdrawn from the repast. Scarcely has this taken place than they again rush with savage eagerness on the carcase they had lately quitted, to satiate themselves with the remnants of the feast.’ Humboldt relates as an eye-witness: ‘I can state as fact that the appearance of a king vulture will put to flight a whole company of his more plebeian relatives: it is never a question of resistance.’ I proved to my satisfaction, after several observations, that the same condition of things exists in Africa between the eared vulture (*Otogyps auricularis*) and the smaller Egyptian vulture (*Neophron percnopterus*), and often the same thing occurs among caged birds, when a quarrelsome individual may gratify his love of bullying to its full extent. Their greediness may be considered as the primary cause of this love of power; for greed may be often observed among birds as well as elsewhere.”—P. 103.

We seem scarcely acquainted with the epithet parasitical as applied to any particular section of the bird world; we incline to consider the birds mentioned below *pirates* rather than *parasites*: they go to work openly and boldly, and display courage, agility and dexterity of the highest order: whether the term *pirate* prove more acceptable than *parasite* I will not venture to predict; it certainly seems more descriptive. Be this as it may, the following instances of this propensity are well selected and well told.

“Parasitical birds depend on the weakness or carelessness of other birds to take their prey. A kite (*Milvus parasiticus*), common in the East, pesters falcons, eagles, and such like, with such bold importunity, that these throw them a portion of their booty. The skuas persecute other gulls to such an extent that they are forced to disgorge the prey they have swallowed, which the former immediately pounce upon. Gannets and terns do the same. These pirates readily distinguish those birds which

they can plague with impunity from those which do not yield to their persecutions. When several different species are to be seen living together, and each has to look sharp after his food, one finds numberless opportunities of observing how they seek to over-reach one another. The laughing gulls, in the Hamburg Zoological Gardens, which are allowed their liberty, keep a regular watch over the diving ducks, and often rob them of their booty as soon as they rise to the surface. They narrowly observe those that dive, awaiting the instant of their return to the surface, at which moment if the duck has succeeded in catching a fish, they immediately dash down and try to snatch it away: this they often succeed in doing, for the diving ducks are in the habit always of swallowing their food above water; and, in spite of repeated diving to gain time, they are generally unsuccessful in their attempts to save their dinner. Coots are as active and quite as impudent as the gulls. I have seen them snatch food out of the very beaks of the swans, which the latter had just brought up from the bottom. These examples which I have quoted are by no means uncommon. Other instances have been observed which are still more remarkable. A friend of mine, a clergyman of undoubted veracity, told me the following charming anecdote of a tame magpie. 'This bird had its abode among the hens and chickens in the yard, though under rather disagreeable circumstances, owing to its being chased at meal-times by the fowls, &c. In these squabbles the magpie was generally attacked by two hens at once, and, getting the worst of it, had to stand by and see his enemies feed,—unable to partake of the feast himself. This state of things produced a bitter feeling, which soon gave the spur to the natural talent for artfulness and slyness, so inherent in the magpie, and led the bird to substitute cunning for the strength he did not possess. His tactics were these:—he now began the quarrel himself while the fowls were feeding; these, angered at the interruption of their meal, immediately left their food to chastise the intruder, who, however, screaming and aggravating, kept hopping away just in front of the enraged enemy, till he had at last enticed them some distance from their food; then, suddenly taking wing, back flies Mr. Magpie, snaps up a fine piece of potato, which he bears off in triumph, and hides up in his store-house under a barrel. This game is carried on until sufficient provision has been accumulated.' The goose, so often spoken of as stupid, sometimes gives proof of a character quite the reverse. A gander had taken up his abode in a wheat-field; at first the bird fed with the greatest nonchalance, until discovered and repeatedly driven out; after which he only sought the field and fed when no one was near. Did any person approach he immediately squatted close to the ground without uttering a sound, and even allowed the whole flock of village geese to pass by without betraying himself."—P. 132.

I believe the following account of a domesticated crane has never

before appeared in English costume, but whether this be the case or no it is far too interesting to be omitted, and must raise the crane intellect in our estimation. My own limited experience of Hereford and Welsh bulls would not lead me to suspect the breast of a bull to harbour such a feeling of friendship as is here described; moreover the voice of those bulls with which I have made more particular acquaintance is shrill, thin, and whistling, and bears exactly the same relation to the sonorous low of a cow as the squeaking of a drake to the loud quack of a duck: I never recollect hearing "the loud bass voice of a bull."

"'The extraordinary cleverness and trustful character of my young cranes,' writes Von Seyffertitz to my father, 'have reached such a degree of cultivation that they engage the attention and awake the astonishment of all who see them. In a very short time they not only lost all fear of man and domestic animals, but even sought the companionship of the former. They knew exactly all the houses in the place wherever the inhabitants had once given them anything, and never omitted to pay them a daily visit. Without the slightest timidity they entered the lower rooms of our house, often remaining there some time and feeding out of the same dish with a very large pointer. I fed them three times a day, and they were thoroughly aware when this took place; they arrived at the proper time and announced themselves by screaming. If the time seemed too long they marched into the kitchen and waited by the fire until their dinner was ready. They would accompany me and others in our walks, following us like dogs; sometimes, taking a flight, they gambolled about in the air, alighting occasionally, and then continued to accompany us. It was a pleasure to have these charming creatures about us.'

"One of these two birds lost its life through an unlucky accident, so that the male of the pair only remained. Von Seyffertitz relates the following of the survivor:—'During the winter my lonely crane had become not only more beautiful, but had greatly improved in intelligence. His bearing had become more dignified, his manners and ways more droll, and his cleverness increased. He had got over the loss of his companion and accustomed to solitude, only it appeared to him necessary to return to the business of active life. As it was out of my power to replace the loss he had sustained by another of his own species, he helped himself: he chose a fresh companion, with whom he contracted a new friendship, which still exists. You will hardly imagine the one he chose among the many creatures surrounding him; it was none other than a bull on our estate.

"'How and from what reason the friendship sprang I cannot exactly make out, though it appears to me that the bull's loud bass voice produced

some especial effect. To be brief, the two became fast friends ere spring time; the crane accompanies his horned favourite daily to the pastures and often visits him in the stable. He treats him always with the most marked deference and evidently considers him as his superior. In his stable he stands respectful and erect by his friend, as though obliged to await his orders; keeps the flies off him; answers when he roars; and takes every possible means to pacify his friend when enraged. When the bull is among the cattle in the yard he plays the part of adjutant—generally walking about two paces in his rear, often dancing round him, bowing respectfully, and in fact behaving in so droll and comical a manner that no one could look on without laughing. In the afternoon he follows the bull and the whole herd to the meadows, a distance of more than two miles, and returns with them in the evening. The bird generally follows some few paces in the rear of his friend, or else walks alongside of him, or suddenly precedes him and runs on twenty yards or more, and then turning round bows down before his august companion until the latter has come up with him. These proceedings are carried on through the whole village, to the intense amusement of the inhabitants, until the farm-yard is reached, when, after repeated bows and demonstrations of affection, he takes leave of his respected companion.

“ ‘This bull is, however, the only animal on this estate which he treats with such distinction. Over all the rest he asserts his superiority, and fully understands how to uphold it. In the village, and especially on the estate, he plays the overseer, and is a great stickler for order; he acts the part of sheep-dog to the herds of cattle. Among the poultry he permits no fighting; keeps a good watch over them; and at the slightest sign of a feud constitutes himself arbitrator between the parties concerned, and punishes the delinquent according to his deserts. They all obey him, yet he never commits any injustice; on the contrary, he lives in perfect peace with all well-conducted animals. He cordially detests anything approaching disquiet or quarrelling, punishing the authors of any disturbance according to their size; horses, cows and oxen feel the full weight of his beak, while ducks and chickens are treated with more indulgence than geese and turkeys. He shows in these cases an acuteness worthy of human beings. The turkeys are the only creatures which ever attempt to disregard his orders or to question his supremacy; when these unite together against him he not unfrequently comes off second best. Not long ago he found a turkey-cock and a barn-door fowl fighting together, and immediately separated the combatants: the fowl retired without opposition; the turkey, however, only followed his example after a fierce encounter with the crane, in which he got worsted; as soon as the turkey gave in the crane returned to the fowls, sought out the cock, and administered the requisite chastisement. He looks after the horses in the yard, especially when standing harnessed to a

cart or wagon: in this case he walks straight up to them, looks fixedly at them, and if they show signs of restiveness he slightly raises his wings, stretches his head and neck as high as he can, and screams his loudest; if this does not suffice he inflicts a series of hearty blows with his beak. Recently there was a horse and cart standing in the yard; the crane immediately went to his post; the horse began to get restive and would not obey, and the bird administered such severe punishment as to make the horse's nose bleed. A short time after the same horse was again standing harnessed to a cart in the yard, when the crane immediately walked up to him as before: no sooner, however, did he make his appearance than the horse recognized him directly, and turned his head on one side to shelter his nose, whereupon the bird made him a profusion of bows, danced round him, and did everything in his power to testify his affection, just as though he desired to make up for his past severity. With the sole exception of his bovine friend, the crane had never before been known to favour any living creature in such a manner; for he is much too proud to associate with the mobocracy!"—P. 139.

And here I take leave of these amusing pages, wishing them every success.

EDWARD NEWMAN.

Men and Beasts. By EDWIN BIRCHALL, Esq.

I HOPED that some one better qualified than I am would have commented on the terrible list of casualties from wild beasts and snakes in India, published in the 'Zoologist' for January (S.S. 2908); but perhaps I may venture to say that, although the statement is extracted from the 'Calcutta Government Gazette,' I have found it difficult to believe that wild beasts and snakes destroyed 38,218 human beings in British India during the years 1867, 1868 and 1869. Surely if this terrific slaughter—compared with which the bloodshed at Gravelotte or Sedan sinks into insignificance—had really taken place, some of the harrowing details would have found their way into the newspapers, which are generally willing to find space for anything unusually horrible. Is it possible that the deaths include cattle as well as men and women?

It would be interesting to know what species of animals committed these fearful ravages, and what were the bags respectively made by tiger, bear, leopard or hyæna.

I am strengthened in my unbelief by the absence (so far as

I know) of any corroborative reports from other parts of the world which are equally with India infested by dangerous beasts. For instance, jaguars, pumas and bears are of frequent occurrence in New Granada, South America: if they fancied human flesh, there is no reason why they should not indulge the taste freely; natives are abundant and defenceless, and the Government would not trouble itself to make reprisals or interfere in any way. Poisonous snakes also abound; but my brother, who has resided there for eighteen years, tells me he never knew of a fatal accident from either beast or snake.

I should also like to see the return of the killed on the other side in this great battle between man and beast: as head-money is paid by the Government of India, doubtless the death of every dangerous animal is reported. If wild animals can still maintain a not unequal struggle with civilized man, armed with modern weapons, one wonders how the men of pre-historic times, armed only with stone hammers or wooden clubs, held their own and ultimately exterminated the still more terrible beasts of their age; we must at least admit it was a very creditable piece of work.

But leaving the bears and lions, as Dr. Watts advises, "to growl and fight" it out as best they can, I wish to say a few words about another race of animals, whose defenceless state ought to have inclined man's heart to mercy. I am informed by an extensive leather merchant that vast numbers of the skins of the gnu and other antelopes are imported from South Africa, and that the trade is steadily increasing, the British shoemaker having pronounced the skins superior to English "kips"! Nearly all the antelopes of the world are congregated in South Africa, on the wide-spread plains of Caffraria. Millions of these most beautiful and innocent of God's creatures have lived in freedom and happiness for countless generations, injuring no one and consuming nothing that man wants; by what right, I ask, does the British boot-maker invade their peaceful state? or what better claim has he upon their skins than he could advance to the hides of negroes, should a demand for natural black leather spring up?

We deplore the folly of our fathers in allowing their sailors to exterminate the dodo and the great auk to provision their ships; but they sinned from an ignorance which we cannot plead, and our children will have a heavier charge to bring against us if we permit the slaughter of the inoffensive antelope to proceed unchecked to the bitter end. Nothing is more certain than that we

cannot with impunity interfere with the order of Nature or disregard the happiness of our weaker fellow-creatures; and to dispossess them violently of their natural rights, without even the excuse of self-defence, and worse still to make merchandize of their sufferings, is in my opinion highly criminal.

The grouse disease, there can be little doubt, was the direct result of the destruction of the animals and birds of prey which would have kept the stock healthy by thinning out the weaker members. Everyone knows Darwin's illustration of the way in which all Nature is linked together, and that even a crop of clover may depend on the number of old maids in the district; cats, mice and bees being the intermediate links.

“From Nature's chain whatever link you strike,
Tenth or ten thousandth, breaks the chain alike.”

Take another illustration: those who have visited Ireland must have noticed the absence not only of woods, but of trees and even hedges, over wide tracts of country, which history tells us were at no distant date densely covered with forest, and the undecayed trunks of the trees are still to be seen in every bog. Ireland must have been a “green isle” truly before the forests fell which once clothed her to the water's edge. I daresay it was necessary to cut down the woods if Irishmen, smugglers and wolves were to be put down effectually; but the question is, why did they not grow again? There has been no change of climate: the fertile soil and warm damp air offer the most favourable conditions for vegetation, but unenclosed land everywhere remains a treeless waste, browsed over by sheep, goats and mountain cattle. I believe that the wolf is the missing link, and his destruction the cause of the absence of trees, with which exuberant Nature would long ago have repaired damages had she been left to work her unimpeded will. Every tree which now springs up is quickly bitten down and destroyed by the cattle; but in the old times not only were there fewer sheep and goats, but the wolves made the country too hot for them to be mischievous or range far from home.

I am reminded of the child's puzzle, in which a man has to ferry a wolf, a goat and a cabbage over a broad river; but the boat was only large enough to admit of one passenger at once besides himself. If he took the wolf over first, the goat would be left behind with the cabbage and eat it; if he took the cabbage first, the wolf

would eat the goat during his absence, and so on. I need not pursue the familiar story. Have not we sent the Irish wolf over the water and left the goat to eat up the vegetables?

I fear the case is a hopeless one, for I doubt whether Irish landowners would appreciate a scheme for promoting the growth of timber by a re-importation of the wolves.

EDWIN BIRCHALL.

February 10, 1872.

Ornithological Notes from Northumberland for 1871.

By T. H. GIBB, Esq.

Little Bittern.—A fine male of this rare species was captured early in May, in a belt of timber contiguous to the Cawledge, a small rivulet which flows into the river Aln, about two miles from the town of Alnwick. The plumage is that of an adult bird, and is in great perfection. Weight four ounces and three-quarters; length fifteen inches and a half; expanse of wings twenty inches; tail two inches long, composed of eight feathers. Iris dark chrome; eyelids and bare parts surrounding the eyes pale yellowish green. The legs very powerful and looking disproportionately thick. It was flushed from the ground by Mr. Chrisp, of Hawkhill, and another gentleman, and after a short flight alighted on a tree, where it remained for nearly an hour before it was shot, displaying meanwhile such immobility as to appear more like an offshoot of the branch on which it was perched than a thing possessing life. The proneness of the bitterns to remain (apparently) inanimate when threatened with danger or disturbed in the even tenor of their way, even when placed in localities offering ready and safe loopholes of retreat, seems passing strange; nevertheless it is a trait in their character very often exhibited, and one I have often observed in their North American congener, *A. lentiginosa*. On one occasion while shooting on Tantamar Marsh, in Nova Scotia, in 1856, in company with a friend, a specimen of the latter flew past and alighted amongst some tall grass, and subsequently carried the proclivity of its race to such an extent that it allowed itself to be fired at five times by my friend, who was an indifferent marksman, before it fell, remaining during the time of loading and firing as motionless as a post, to which indeed it bore a great resemblance, with its contracted neck and bill pointed

upwards. It is rather a singular fact that on the 24th of November, 1870, an immature night heron was shot in the immediate vicinity of the place where the little bittern was killed, the capture of which I recorded in the proceedings of the Berwickshire Naturalists' Club for 1870.

Raven.—Twenty years ago this bird was not altogether uncommon in the hilly districts of our county, the Cheviots affording shelter to many pairs; but through the indiscriminate onslaught of gamekeepers they have become so rare that their destruction in Northumberland, like that of other rapacious birds, seems only a question of time. Happily, however, a pair bred last year in an old haunt in a secluded part of the Cheviot Hills. Most, if not all, of their young, were taken alive from the nest; one of them came into my possession, but owing to the mischievous and dangerous tricks in which he delighted to indulge, I had to send him away.

Peregrine.—A mature male was captured in the month of May on the Cheviot Hills. The peregrine is much less common now than it was in former years, many of the old breeding-places having been deserted for some years. An immature male was taken in a very curious manner near Alnwick a few years ago. A strange noise was heard by a country lad, who, on going to the place from whence the sound came, discovered two birds, a peregrine and a kestrel, fighting with so good an interest that he was enabled to approach near enough to strike them with a whip, killing the former on the spot, while the latter was so mauled by its more weighty antagonist that it expired shortly after having been taken up.

Velvet Scoter.—In the month of August a male in very perfect plumage was captured alive, in an exhausted condition, on a point of rocks on our sea-board. It is the first I have seen in this locality, and it may be difficult perhaps to account for its appearance here at the above season of the year, as I am not aware it has been observed, except as a winter visitant.

Purple Sandpiper.—This bird, a short time ago, was very numerous on some parts of the Northumberland coast. In December as many as five specimens were shot in one week. It is rather curious that they were never seen by themselves, but always in the company of the purre. Two of the five killed were females; these were much lighter in their plumage than the males, the purple-

steel tint on their backs being difficult to observe, except in certain lights. Heretofore I have always considered them rare in Northumberland, having never seen more than one during many years of observation.

Tufted Duck.—A fine male was shot in February on the river Aln, about one mile from the sea. This handsome little duck is now and then seen on the Northumbrian coast.

Longtailed Duck.—An old male was shot in February, and a female in March. The latter are much oftener seen than the former.

Goosander.—A male and female were taken in March. Females are not at all rare on our sea-board, and inland on our rivers, while males, either in the mature or immature state, are very seldom observed.

Bohemian Waxwing.—A specimen of this charming bird was killed on the 15th of November, near Acklington Station on the North Eastern Railway, by a boy with a catapult. The waxwing visits us occasionally in small flocks. In 1868 they were more than ordinarily numerous, and many specimens were procured.

Bittern.—A specimen was caught alive, but in an exhausted state, on the 22nd of November, near Felton; and another, a very magnificent male, was shot on the 4th of January, 1872, near Lucker, by Mr. Ackroyd, of Oakroyd Hall, near Leeds. On dissection I found in its stomach three trout, averaging in weight about three ounces each. Before the county was drained, and when bogs and marshes were in their pristine glory, the bittern was not unfrequently seen, but of late years it has been seldom observed.

Quail.—On the 3rd of December a fine female was shot near to Alnwick. This bird can only be regarded as an accidental straggler in Northumberland.

Gray Plover.—Small parties of the gray plover were very generally distributed along the coast in the early part of the year 1871, and several specimens were procured. They seemed very unsocial in their habits, and never fraternized with the golden plover, which abounded on the coast at the time. At ebb-tide the latter would hasten on to the rocks as they were left dry by the receding waves, while the former seldom if ever did so, keeping more to the sandy beach and slakes.

Richardson's Skua.—An immature male was shot in January,

and I observed the common skua passing along on some marauding expedition more than once.

T. H. GIBB.

Alnwick, January, 1872.

Ornithological Notes made in the neighbourhood of Plymouth during February, 1872. By JOHN GATCOMBE, Esq.

Great Blackbacked Gull.—Feb. 1st. Wind S.W., still blowing hard. Great blackbacked and other gulls very numerous in the harbour: observed several flocks flying round, hovering and dipping in the water full a quarter of a mile from the shore; one of them rested for some time on a buoy.

Feb. 3rd. Great blackbacked gulls plentiful, and kittiwakes very tame, flying over the rocks within a few feet of me. There were eight great blackbacked gulls dipping in the water close together, three in full plumage and five immature. I may here mention that on visiting Leadenhall Market in December last I examined three great blackbacked gulls hanging at a stall, two of which had their heads and necks pure *white*, as in summer, the others having those parts streaked with grayish brown, which is supposed to be the case during the winter. A few days since I saw a great blackbacked gull from the gullet of which was taken a gurnard ten inches long. A great assemblage of gulls hover round the men-of-war in our harbour daily, during the dinner hour, eagerly looking out for the scraps that may be thrown overboard, and they appear to know when twelve o'clock arrives perfectly well: they are generally joined by a few rooks and crows. At dusk this afternoon I saw twelve great blackbacked gulls resting close together on a mud-bank, and not far from them a very large flock of herring gulls; after a while they all rose together and flew off seawards, I suppose to find a resting-place for the night.

Northern Diver.—I have not seen any more of these birds during the past month, but a person called at a bird-stuffer's shop not long since and boasted of having killed an unusual number, I am sorry to say.

Iceland Gull.—Feb. 4th. Watched an Iceland gull sailing up and down just above the low cliffs at the Devil's Point, which was so tame and came so close that I could plainly see its pale flesh-coloured bill with a very dark tip, and also its pinkish legs: it was

in the very light brown, or immature plumage. This species, as well as the glaucous gull, when on the wing, may be easily distinguished from all other gulls, even when young, by the peculiar light colour of the primaries, which when viewed from below appear almost transparent, presenting a pretty effect against the light of the sky above; and somehow the wings of an immature Iceland or glaucous gull when stretched in flight always remind me of those of a barn owl, but I should fancy they would bear a still greater resemblance to those of the Greenland falcon, both in size and colour: but that bird I have never had the good fortune to see in a wild state. I once shot a glaucous gull which disgorged a short junk of conger eel, almost as large round as my arm.

Feb. 5th. Observed between twenty and thirty great blackbacked gulls resting on the West Mud, near a large number of herring gulls and other species. There were also several guillemots and razorbills diving about the harbour and in the Sound, and at low water a great number of curlews, dunlins, and ring dotterel were feeding on the mud. Strange to say I have not observed the lesser black-backed gull during the winter.

Buzzard.—Examined two exceedingly fine buzzards, in the flesh, which had been trapped and sent to a bird-stuffer for preservation. They were both varieties, showing an unusual amount of white and ferruginous colour on their plumage. The thighs of one were most beautifully barred with ferruginous on an almost white ground.

Feb. 7th. Morning very fine and mild. Took a short walk into the country. Missel thrushes and robins singing in every direction. Saw a skylark high in the air singing delightfully; also heard the call-note of the wood lark. Starlings very numerous: this species has bred and increased wonderfully in the neighbourhood of Plymouth of late years, and they assemble in such numbers to roost in a shrubbery at Stoke, adjoining Plymouth, that I am credibly informed they actually broke down a branch eight inches in circumference by their weight.

Feb. 8th. An Iceland gull again flew past me to day, quite close.

Razorbill.—Feb. 10th. Razorbills very numerous, diving close to the rocks, and many floating dead on the water or washed up along the shore. This, I understand, has been the case almost throughout the entire length of the English coast during the last two months,

and the death of so many is no doubt to be accounted for by the long continuance of south-westerly gales. I have on many occasions watched guillemots and razorbills for hours together, swimming, or rather floating, just outside the breakers during a heavy gale, when you would fancy that every wave must dash them on shore, but just as the crest of a huge thin wave is about to curl over, the poor birds dive through it and come up on the other side; but at length becoming quite exhausted, they are caught, rolled over, and dashed high up on the shore, where death shortly ends their sufferings. I am sorry to add that hundreds of razorbills, and kittiwakes too, have been shot at Plymouth within the last two months, during which we have had a succession of severe storms on the Devonshire coast, and many kittiwakes have been picked up exhausted in the streets. I have observed razorbills flying about a great deal of late, a very unusual thing for them to do in harbours during the winter: some of them have already assumed their full breeding plumage, and as early as the 7th of the present month I saw a shag in almost full nuptial dress of silky black and bronze-green, with a rather long crest on the head, but the tips of which had only just begun to curve.

Gannet.—Feb. 12th. Gannets very plentiful in the channel: saw a fine one alive, which had been captured with a hook baited with a herring; three more were hooked, but two of the poor birds in their struggles broke the line before they could be hauled into the boat, and got off with (I am sorry to say) the hook fixed in the gullet. Several others have been taken in nets.

Ring Dove.—On the 18th a rather strange circumstance happened in our garden: a ring dove alighted on an exposed branch of a low acacia tree, within a few feet of a road where people were constantly passing. I watched it with a telescope from my window for a quarter of an hour, when it flew off across the water to the woods of Mount Edgcumbe. Perhaps it might have been frightened by a hawk, for it certainly was a very public place for such a wild bird to take refuge. It remained perfectly motionless all the time it was on the branch.

Feb. 19th. A great number of curlews, dunlins, ring dotterels and gulls feeding on the West Mud, with a heron in their midst stalking gravely about in the shallow pools, stabbing at small fish, crabs, or perhaps shrimps, in all directions.

Feb. 20th. Skylarks, missel thrushes, and chaffinches singing.

Sparrows commencing their noisy spring battles, and the herring gulls calling in the air just as they do in the breeding-season. Observed three gray wagtails and a pair of wood larks.

Titmice.—Feb. 27th. Wind east. Came across an extraordinary flight of titmice, composed chiefly of the bluecap, which were flitting about among the trees and bushes, and every now and then descending in a body to the ground, hopping about and feeding among the grass just like finches. They were exceedingly wild and would not let me come near them, flying straight ahead, but every now and then down in the fields, and then off again. When they had to cross a field they all went in a flock. I never saw so many together in my life before; there must have been far more than a hundred. Notwithstanding the severe gales and rain of late the blackbirds have been singing from daybreak till dusk.

J. GATCOMBE.

Durnford Street, Stonehouse, Devon,
March 1, 1872.

Ornithological Notes from North Lincolnshire.

By JOHN CORDEAUX, Esq.

(Continued from Zool. S. S. 2932.)

JANUARY AND FEBRUARY, 1872.

Mr. Dickens begins one of his tales, I believe 'Bleak House,' by the remark, "It was raining down in Lincolnshire"; and raining down in Lincolnshire it certainly has been for the last two months, with scarcely a day's intermission, till our bleak and melancholy marshes, between water and mud, appear fast relapsing into their primitive and original state, differing from old times, however, in one striking particular—an almost total absence of bird-life; for, without exception, it has been the very worst season for wild ducks and waders ever known along the east coast. I have scarcely seen a flock of plovers, either golden or green, since the middle of December; no snipe or wild ducks; and on the flats the absence of all waders has been most remarkable: day by day, on traversing the embankment and sweeping the muds with my glass, I have come away without seeing even a solitary dunlin. Had it not been for the gulls, more numerous than usual, and the inevitable "hoodies," this district would have been nearly destitute of birds.

Snow Bunting.—January 6th. These lively little birds, so numerous during November and December, left us about the commencement of the new year. I have only seen two or three immature birds since this time.

Green Sandpiper.—January 25th. There was a tremendous rain on the 24th, with the barometer lower than I have ever seen it for the last twenty years. On the 25th our marsh-drains and becks were filled to the brink with yellow turbid water, and there was also much land under water. From a drain considerably above the level of the others, and consequently containing but little water, I flushed three green sandpipers: it was one of the few places left where they could feed.

Tree Sparrow.—Have seen some large flocks lately on the stubbles in our middle marshes, containing sometimes several hundred birds: five shot to-day (January 25th) had their crops and gizzards full of the seeds of the greater plantain (*Plantago major*).

Fieldfare.—Some low wet meadow-land, much frequented by fieldfares, has all the appearance of being riddled with shot-holes, so closely has the ground been bored by them in their search for wireworms and slugs.

Kittiwake Gull.—January 29th. I picked up a wounded kittiwake from some fallow land this afternoon. It was a young bird of the year, having the black collar. The kittiwake is by no means a common visitant to the Humber, and we very rarely see it feeding inland with other gulls.

Knot and Redshank.—January 29th. There are two or three small mixed flocks of knot and redshank on the flats this afternoon; the knot wild and almost constantly on the wing. Although both species rose together, the redshanks were unable to keep up with the short turns, twists and dashes of their associates, but, as the flock gyrated over the muds, became gradually weeded out to the rear, where they formed a little compact body, keeping pace with the knot as best they could, and again alighting with them.

Golden Plover.—February 18th. Saw a small flock of about twenty. First heard their spring call-note.

Gulls.—I never knew gulls so numerous as they are this season inland; whether the supply of food at sea has run short, or that on land been more attractive I cannot say, but they now daily visit the partly cleared turnip-fields in large flocks: these are princi-

pally herring gulls, both mature and immature (in the first year's plumage). The mature birds are much the most numerous. They are far from shy, and allow me to ride amongst them, so that there is no occasion to use a binocular, as I can easily discern the tint of bill and tarsi with the naked eye. Very lovely indeed does the mature bird look in his pure unsullied dress, and I quite envy him as he paddles about in the semi-fluid soil, the only clean thing in this unclean land, where everything seems stained to an universal clayey hue. The immature birds, too, are to be admired in their pretty marbled garb of quiet gray. I have been very much struck this winter by the great difference in size in this species. Some of the old gulls look quite small compared with others, and the same is noticeable in the young: to pick extremes, the disparity seems sufficient to create a specific distinction. In the common gulls, which occasionally join these assemblies, I do not notice the same irregularity; they are all much alike in size. To-day (February 27th), amongst the herring gulls was a single brown-headed gull, already wearing his summer cap.

Shorteared Owl.—I have had a captive owl of this species throughout the winter, feeding him on birds and mice, but he will eat anything in the way of flesh, cooked or raw. I have him confined in a large roomy packing-case, having the front covered with galvanized wire rabbit-fencing. There is a circular perch about three-quarters of an inch in diameter through the centre of the case, and on this he always sits, perching invariably with two toes only to the front, the outer toes being turned to the rear.

Wild Geese.—February 29th. Saw a skein of ten wild geese flying a few feet above the Humber this morning: from their size and colour I believe them to have been graylags.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire,
March 5, 1872.

Litter of Sixteen Puppies, of which one only was a Male.—With reference to the pointer bitch producing a litter of ten female pups at a birth, as noticed in the 'Zoologist' (S. S. 2990), I will place on record that a large white terrier bitch, in my possession when in Calcutta, produced a litter of sixteen, only one of which was of the male sex.—*E. Blyth*; *Zoological Society of London*, March 8, 1872.

The Otter.—I shall be greatly obliged for any reliable information as to the breeding habits of the otter; particularly the time of year it brings

forth: the number of young at a birth; the situation selected, and whether a nest is prepared for the reception of the young. One instance has come to my knowledge on reliable authority, in which a nest was formed in the shape of a mound, consisting of about a cart-load of rushes, &c., with holes at top and sides: in the centre of this the young were placed. I have reason to believe that the otter rarely has young later than February or March, and seldom more than three at a litter, also that aquatic birds sometimes form a part of their food. Any precise and authentic information will be acceptable.—*Thomas Southwell; Earltam Road, Norwich.*

Ornithology of Dartmoor.—Although I have no fact of any importance to relate, the account of the bird life to be seen on Dartmoor in the beginning of the month of March may be interesting to the readers of the 'Zoologist.' The matchless tonic supplied by the invigorating moor air tempted me to give a couple of days, about the date I have mentioned, to a walk on the peaty wilds of our largest English forest. Peewits and golden plovers were in abundance; the former were evidently paired and contemplating nesting. The latter were flying restlessly from one tor to another in large flocks, and would not come near, although the keeper I was with whistled in most seductive plover tones. Large parties of fieldfares rose chattering from the splashy ground, and were hailed almost as strangers, the extreme mildness of the winter having occasioned them no necessity to frequent the enclosed orchard grounds and meadows of the lowlands. A few curlews were noticed, and had doubtless just arrived from the coast in search of eligible nesting quarters. Snipe were numerous in their usual favourite bogs, and their drumming in the air was heard throughout the day, imparting a weird characteristic to the scenery. Those we sprung were in pairs, and were, I imagined, nesting. Jacks were plentiful in places, and seemed to be collecting in little parties preparatory to their departure. There is one fact in writing of the Ornithology of Dartmoor which is worth mentioning, and that is the scarcity of birds in the dreary centre of the forest. I remember one hot summer day walking across the moor to Cranmere Pool, and for the last three miles not a single bird was visible, not a meadow pipit seen. Throughout the year very few birds are to be met with in these cheerless solitudes; plovers, snipe, partridges, are all found in largest numbers on the edges of the forest. I recollect one day, towards the end of October, seeing all the ordinary British thrushes in the course of a morning's walk. Fieldfares and redwings had just arrived, and we found the former in large flocks on the bogs, where their scent made my setters try my patience by drawing on them and pointing them, and the latter in the hedges as I climbed the hill to the moor. Dippers were startled on each mountain streamlet. Thrushes, blackbirds and missel thrushes were plentiful

enough, and on my return home an old male ring ouzel was seen, a late straggler, taking his dinner off the red berries of a whitethorn.—*Murray A. Mathew; Bishop's Lydeard, March 19, 1872.*

Birds observed in Liverpool Market.—February 2. Immature redbreasted merganser in the market to-day, last year's bird, from North Wales. February 8. Noticed a quantity of razorbills, and a few guillemots amongst them, in our market to-day; also some bernicle geese. It is curious how general the mortality amongst the former birds seems to have been lately. February 10. A Slavonian grebe in very good plumage hangs in the market to-day. February 17. Several redshanks, one greenshank, or bartailed godwit, and some oystercatchers in our market to-day. Some dunlins I shot this afternoon show very evident signs of their coming handsome summer plumage. All through the winter they have kept together in one enormous flock, and are now beginning to separate into smaller parties. February 19. Some tufted ducks and knots in the market to-day. Pochard, wigeon and scaup ducks have been very numerous in our market all the month, and teal and wild ducks have been plentiful till quite lately, but now scarcely one of the latter can be obtained.—*II. Durnford; 1, Stanley Road, Waterloo, Liverpool.*

Birds attacking Dragonflies.—As a question has lately been raised as to whether birds ever attack dragonflies, I think the following paragraph, taken from Newman's edition of Montagu, p. 27, may prove interesting:—"A few years since the Rev. Mr. Holdsworth, a very intelligent observer of Nature, who resides contiguous to a large piece of fresh water called Slapton Ley, in South Devon, close to the sea, noticed a large species of hawk skimming over the water in pursuit of the larger dragonflies (*Libellulæ*), which it seized with its talons and took them from thence with its beak. This bird was observed to frequent the lake daily for a long time, for the purpose of preying on these insects"—*John Gatcombe.*

[The roughlegged buzzard, kestrel, and probably other hawks, feed on dragonflies.—*E. Newman.*]

The Fourth Edition of "Yarrell."—We have heard, as yet, little but praise, undoubtedly well deserved, of Professor Newton's new edition of this book. One change, however, in the nomenclature employed in the work, seems to me to require some slight explanation. I see with regret that the original terms "*Raptores*" and "*Insessores*" have given way to "*Accipitres*" and "*Passeres*." The excellence of Mr. Yarrell's system has, except on certain minor points,—the positions to be accorded to the phalaropes and the pratincole, to wit,—not been questioned; indeed the simplicity of the arrangement, together with its precision, might almost incline us to imagine that the birds were made to fit the system, instead of the system to suit the birds. In the new edition the original generic and specific names have been retained, side by side with the new ones, and it seems almost a

pity that the same judicious course was not adopted as regards the orders, especially as the original edition has been followed, in this respect, by Mr. Smith in his 'Birds of Somersetshire,' by Mr. Gray in the 'Birds of the West of Scotland,' and, I doubt not, by other authors whom I have not met with. I wish to advance this opinion with all humility, and I hope with due deference to Professor Newton's acknowledged experience and judgment.—*W. J. Chalk; Tavistock, Devon, February 22, 1872.*

Hawks, &c., at Gravesend.—The larger hawks have been unusually common here the last two years. I have had several roughlegged buzzards sent me this winter; they were all females: three out of five marsh harriers were also females, as were also two examples of the common buzzard. Three peregrines have come under my notice since Christmas: one male, shot by a friend while rabbiting; one very large female, shot on the river,—it had just killed a ring dotterel; and one fine young female, shot last week on the river shore. The merlin is also frequent, and can be often seen pursuing and darting at the immense flocks of starlings that frequent our marshes: I have watched it for hours, but never saw it strike one. The kestrel is also unusually numerous, especially in the Essex marshes: I had two beautiful adult males brought me: they were killed at one shot while fighting and screaming in the air. The gray wagtail is common all winter, from November till March, in the water-cress beds at Springhead; I have obtained many fine examples from there. The cirl bunting also occurs here, in flocks of from four or five to twelve.—*D. T. Button; 89, West Street, Gravesend, February 21, 1872.*

White's Thrush in Durham.—I feel sure that many of your readers will feel interested in the following curious capture of White's thrush in Castle Eden Dene, county of Durham. On the 17th of January last Mr. Burdon was shooting in the Dene, when a bird came across him, and, not knowing what it was, he fired and hit it, but it could not be found. He, however, picked up a wing-feather and some breast-feathers, which he brought home. On the 31st (a fortnight afterwards), Mr. Burdon was shooting over the same ground and came upon the bird, and after being chased some distance it was finally captured by one of the watchers, apparently but little the worse, excepting that the whole of the primary feathers of one wing were shot off, which stopped the bird's flight. It was brought home, put into a cage, and, as it eats well, I hope to be able to keep it alive.—*John Selater; Castle Eden Castle, Durham.—From the 'Field' of February 2.*

White's Thrush in Durham.—I went over on the 12th, and again on the 18th inst., to see a specimen of White's thrush, which had been captured in this neighbourhood, and which was then alive at Castle Eden Castle. There is no doubt about the identity of the species. It is totally unlike the missel thrush, a bird which in its immature plumage has sometimes been mistaken for it. Unfortunately, when the bird was caught the tail was

considerably injured, and there are now but eight tail-feathers remaining instead of fourteen (the missel thrush having but twelve). By other marked characters, however, it is easily distinguished. The bird, I am sorry to say, looks very unwell, and will, I fear, die from the injuries received.—*J. C. H. Johnstone; Castle Eden Colly, Durham.—From the 'Field' of March 9.*

White's Thrush.—Mr. F. Boyes (Zool. S. S. 2922) appears doubtful as to the specific distinctness of the White's thrush, but I think any doubts on this head will be removed by a perusal of Mr. R. F. Tomes' paper on the subject in the '*Ibis*' for 1859, p. 379—389, and especially by the summary of anatomical peculiarities which Mr. Tomes gives at p. 388. The following synonymy of White's thrush chiefly taken from Gray's '*Hand List of Birds*,' vol. i., p. 254, may prove useful to those who are investigating the subject:—

Turdus (Oreocincla) varius of Pallas (but not of Horsfield).

„ „ *aurea* of Hollandre.

„ „ *squamatus* of Brehm.

„ „ *Whitei* of Eyton.

„ „ *lunulatus* of Blasius (but not of Latham).

„ „ *Hancii* of Swinhoe.—*J. H. Gurney; Marlton,*

Totnes, February 29, 1872.

Varieties of the Blackbird.—A number of varieties of the common blackbird have occurred in this neighbourhood during last autumn and winter. One of them was a very nicely marked bird, the contrast between the two colours being great, for whilst the white portions were very pure, the normal colouring was very rich: it had also a rich yellow beak, and I call attention to this as on dissection it turned out an old female, and had it not been dissected would undoubtedly have passed as a male. May not this be the reason in some instances of the more frequent occurrence of (so-called) male varieties? Another of the birds was of an uniform dirty white throughout, and had not a single dark feather about it. The rest were more or less pied, and chiefly old birds. I have noticed on the arrival of our migratory blackbirds in the autumn that not one in twenty (of the males of course) has a yellow beak; still they appear to have assumed the adult plumage, but want that richness of colour that our resident birds have: I think they are also a little smaller. Are they all birds of the year?—*F. Boyes; Beverley, February 23, 1872.*

Chiffchaff in March.—I wish to inform you that I heard the chiffchaff, for the first time this year, here on Tuesday, the 12th of this month. Out of the last fifteen recorded annual arrivals, these birds have only in four years been heard before April 5th in this neighbourhood. Their arrival last year was also early, *viz.*, on March 24th.—*Clermont; Ravensdale Park, Newry, March 18, 1872.*

Early Arrival of the Chiffchaff.—I should like to know if the chiffchaff (*Sylvia rufa*, Temm.), has been heard in the neighbourhood of London. I heard the note, for the first time this year, yesterday, and saw the bird to-day. This is unusually early here. I have kept a record of the note, and of the appearance, of this bird for twenty years, inclusive of this year, and I find the earliest record of its note is the 20th of this month. Probably the long continuance of south-east winds may have something to do with the early appearance of the bird.—*Harford Jones Brydges; Boultibrooke, Presteign, March 16, 1872.*

Early Arrival of the Chiffchaff.—I saw and heard the chiffchaff on the afternoon of Thursday, March 14th, in the Botanical Gardens at Glasnevin, near Dublin.—*A. G. More; Royal Dublin Society, Kildare Street, March 15, 1872.*

Waxwings in Nottinghamshire.—In November last a flock of these rare winter visitants frequented the woods near Ossington, which are of considerable extent. One of the keepers shot more than a dozen, the plumage of which was in the height of beauty, the wax-like drops on the tips of the wings being large and bright. The birds were, unfortunately, kept too long before being sent to be preserved, and very poor specimens have been made of them, except two, which are pretty good; these I have now in my collection. It is several years since they have been seen in this county.—*J. Whitaker, jun.; Ramsdale House, Notts.*

Shore Lark and Crested Tit near Whitby.—You may feel interested in knowing that we have obtained a shore lark (*Aulauda alpestris*), which was shot on the beach near Whitby, by our indefatigable friend, Mr. George Kitching; also a crested tit, which he got in a ravine six miles hence.—*Martin Simpson; Whitby Museum, March 20, 1872.*

Dispersion of a Rookery by Carrion Crows.—A small band of carrion crows, not consisting of more than four or five, have lately driven off a colony of rooks that have long built their nests in a group of Scotch firs that grow around the Lodge. The fightings and buffetings have been continued for some weeks, but victory has rested at last with the crows. No sooner, indeed, do the rooks return than an ominous trumpeting croak from a sentinel gives warning of their approach, and the chase begins and continues till the rookery is once more deserted by the lawful owners. One old crow seems to be the leader in the forays, and he is so wary and crafty in his movements that he cannot be taken at a disadvantage. I shall be glad to know if others can bear testimony of a similar character.—*Peter Inchbald; Hovingham Lodge, near York, March 6, 1872.—From the 'Field' of March 9.*

Great Black Woodpecker.—"In the edition of Latham annotated by the late Earl of Derby, and now in the possession of the present earl, the passage 'One was killed in Lancashire by Lord Stanley,' is erased, and in

the margin is written, in his lordship's own hand, '*A mistaken idea.*'"—*Collingwood's Historical Fauna of Lancashire and Cheshire*, p. 18. This note has been reprinted in the '*Zoologist*' for 1865, and has appeared in various other publications, and yet my friend Mr. Smith is reported to have said (S. S. 2914) that in one case an example had been shot by the grandfather of the present Lord Derby. There is no other record of a professed British specimen that has not been disproved, yet, in the same report, my friend Professor Westwood is made to say Mr. C. Robertson, of Oxford, assured him "that he had repeatedly seen the bird in the woods near Clovelly, and Mr. Jackson, of New College, had observed it in East Devon." I think this note and the preceding one about hawks and dragonflies, show that entomologists should now and then glance at what is doing in the sister Science of Ornithology, or refrain from all allusion to birds. Mr. Bond and Mr. Weir, as proficients in both the ologies, show to great advantage in the report in question.—*E. Newman.*

Blackbilled American Cuckoo in Ireland.—Within the last few days the occurrence of a specimen of the blackbilled American cuckoo (*Coccyzus erythrophthalmus*) has been reported to me on such good authority that I hasten to make it known, with your permission, to the readers of the '*Zoologist*.' Mr. William Darragh, curator of the museum of the Belfast Natural History Society, a very experienced practical naturalist, informs me that in the end of September last (1871) one of these birds was shot by Dr. Rea in the parish of Kilbead, in Antrim, ten miles from Belfast. Mr. Darragh examined it closely, comparing it with American skins in his museum, and found the distinctions between it and the yellowbilled American cuckoo clearly marked, and corresponding with those defined by Wilson in his '*American Ornithology*,' with the exception of the black bar near the tips of the tail-feathers, which in the individual in question is not very clearly marked. I have examined the volumes of the '*Zoologist*' from 1853, in vain, for a record of this bird as British, but there can be no reason why it should be more unlikely to cross the ocean than its relation, the yellowbilled cuckoo, which has four times at least accomplished that feat, and I believe always at the same time of the year, *viz.*, in August or September, or that in which this blackbilled specimen made its appearance.—*Clermont; March 9, 1872.*

[There can be little doubt that this is the bird mentioned in the February number of the '*Zoologist*' (S. S. 2913) by Mr. Blake-Knox.—*E. Newman.*]

Cuckoo near the Sea.—I think Mr. Carey has missed the point of Mr. Leach's communication. There is nothing remarkable in hearing a cuckoo near the sea, but to hear one in September indicates that it has stayed long after its usual time, for the old birds migrate in July.—*J. H. Gurney, jun.; Northrepps, Norwich, March 5, 1872.*

Early Nesting of the Kingfisher.—I have twice before sent you notes

as to the kingfisher, expressing my surprise at its breeding so early in the year. I now wish to add, in further evidence, that three young ones were out this year on the 11th of March.—*W. C. Hewitson; Otlands, Walton-on-Thames.*

Purple Heron, Squacco Heron and Night Heron in Norfolk.—I find that my meaning has not been clearly understood about the purple heron, squacco heron and night heron, in the last 'Zoologist' (S. S. 2983), where I have said that they were "all most plentiful fifty years ago" in Norfolk. I did not intend to convey the idea that they were ever anything more than accidental visitants, but that of late they have become more rare than ever, and that perhaps they had never been *more plentiful than they were about fifty years ago*. In this Mr. Stevenson's 'Birds of Norfolk' bears me out. Between 1830 and 1833 he records eleven purple herons (to which I can add a twelfth) as against three killed since that date, vol. ii., p 145. Between 1820 and 1834 six squacco herons as against one since. Between 1819 and 1827 seven or eight night herons as against one since.—*J. H. Gurney, jun.*

Plumage of the Whitefronted Goose.—On the 25th of last October I bought a young whitefronted goose: an old one was hanging up with it. It had yellow legs and a very short beak, and the nail at the end of the upper mandible was black. There was no white on the face, round the base of the mandibles, and but the very slightest trace of the usual black barring upon the breast. Since the legs have dried, they have become the colour of a pinkfooted goose's, and I would defy anyone to distinguish it from one, yet I am convinced it is a whitefronted.—*J. H. Gurney, jun.*

Mortality amongst Razorbills.—During a visit to the coast of South Devon, in the early part of last month, I had an opportunity of observing the phenomenon noticed by two of your correspondents in your last number, *viz.*, the unusual mortality that seems to have prevailed amongst the razorbills and guillemots lately. The shores of the Warren, a large sand-bank near Exmouth, were strewn with bodies of the former species in various stages of decay, and although I only noticed one specimen of the latter bird, yet I doubt not that had I pursued my search further I should have come across others. I went from Exmouth to Northam Burrows for a few days, but was somewhat surprised not to find a single bird washed ashore upon that coast, although I have on several previous occasions found it strewn with the bodies of birds of both species, usually after the autumnal gales. At Exmouth I shot a good specimen of the redthroated diver, which, when I first observed it, had two other birds of apparently the same species with it.—*Marcus S. C. Rickards; 37, Cornwallis Crescent, Clifton, March 16, 1872.*

Mortality amongst Razorbills.—Seeing an account in your last impression of several razorbills having been found washed ashore near Eastbourne, I

may state that the same thing has occurred here. I found at least nine or ten of these birds on the 12th instant, within a very short distance; they were remarkably thin, and in various stages of decomposition. Among them was a single specimen of the common guillemot.—*Leiston, Suffolk.—From the 'Field' of February 24.*

Mortality amongst Razorbills.—A similar circumstance as reported from Eastbourne has been occurring here at Aldeburgh for some weeks past—namely, an extraordinary advent of, and mortality amongst, razorbills, numbers of which have been washed ashore. From whence all these individuals have strayed I know not, but imagine that, as starvation appears to be in each and every case the actual cause of death, they had been in close attendance upon some shoals of small fish—probably sprats—which had suddenly taken to deeper water through the generally rough condition of the sea. Certain it is, that all the birds I have examined are more or less mature, with good and sound plumage. In my walk this morning my dog brought me no less than eleven specimens, and I hear of very many more having been found.—*N. Fenwick Hele; Aldeburgh, Suffolk.—Id.*

Mortality amongst Razorbills.—It may interest some of your readers to hear that numbers of razorbills have been washed ashore at Milford, near Lymington. I must have seen during a walk at least from thirty to thirty-five of these birds. I saw only one guillemot, or willock, amongst them, but discovered one of those rare birds, the little auk. I did not observe a single puffin. This shore is exactly opposite the west end of the Isle of Wight, a well-known breeding-place for these birds. Of course the continual rough weather caused their death, but what surprised me most was seeing so many razorbills and only one willock, the latter being much more numerous on this coast. I may remark that a little auk was shot here four winters since on a pond of about thirty acres, which is only separated from the sea by the beach. It is much frequented by phalaropes during the end of October and November. I once noticed as many as fourteen at one time on it.—*Id.*

Mortality amongst Razorbills.—Whilst walking along the shore between St. Leonard's and Pevensy on the 10th instant, I noticed the dead bodies of twenty-three razorbills and one redthroated diver (all immature) lying on the beach. I caught one of the former alive, but it died before I got home. What can be the cause of this great mortality amongst them? The stomachs of four I opened were perfectly empty, and their bodies very lean. There had been no storm at St. Leonard's during the week to account for their being unable to obtain food.—*H. R. Leach.—Id.*

Mortality amongst Razorbills.—Numbers of razorbills have been washed ashore during the past month at Bournemouth.—*R. F. C.—'Field,' March 2.*

Mortality amongst Razorbills.—I shall be glad to see some explanation in the 'Field' as to the probable cause of the recent murrain among the

razorbills which several of your correspondents have noticed on different parts of the coast. In my walks along the beach at Torquay I have observed the same circumstance: the strand in places was literally strewn with dead birds: they appeared in good condition.—*H. C. Cuppage (Lieut.-Col.).—'Field' of March 2.*

Mortality amongst Razorbills.—Seeing that you have given publicity to several letters on the "mortality amongst razorbills," it may interest your readers to know that a similar circumstance has occurred on the Durham coast off Castle Eden, only in this case the number of guillemots and razorbills have been about equal. The same thing happened here in the months of January and February, 1870, when a larger number were washed ashore than at present. There were also a few puffins amongst them. I picked up one specimen of razorbill which differed from any I have ever seen. It was without the white streak between the beak and the eye. I have shown this to several naturalists, none of whom ever noticed this peculiarity in the bird. One of your correspondents mentions the little auk having been taken inland. I have in my collection one that was picked up alive on the road in front of some houses at Castle Eden, three miles from the sea, about seven or eight years ago. In all these cases the sea has been very rough, and all the birds that I examined were very thin, with empty stomachs. I have no doubt they perished through not being able to obtain food.—*John Selater; Castle Eden Castle, Durham.—Id.*

Mortality amongst Razorbills.—I see you have two or three letters from correspondents respecting the great mortality amongst razorbills, but they are all from the South of England, and perhaps it may be interesting to some of your readers to hear that the same thing has occurred in the North. On the beach at Sunderland quantities of razorbills and guillemots have been found dead, both young and old birds, evidently from starvation. The weather for the time of year has not been particularly bad, the wind blowing almost invariably from the west and south-west. Of course occasionally after a strong north-east gale we have birds either washed ashore or found almost dead on the beach, as was the case two winters ago, when, amongst others, six redthroated divers, a species rarely seen here, were picked up near the docks; but for such a large number of birds to die in moderately fine weather seems unaccountable.—*C. Grimshaw.—'Field' of March 9th.*

Ostrich-farming in South Africa.—This new branch of farming has been carried on very successfully for the last few years, and, as the subject may be interesting to some of your readers, I venture to offer a few remarks on the mode of domesticating ostriches, habits of the bird, &c. Within the limits of the Cape Colony the wild ostrich has become comparatively rare, and the bulk of feathers annually exported come from the interior, and are collected by traders, who are constantly travelling to and from the market,

often being away a whole year. A law has lately been passed by the Parliament, prohibiting the shooting of the few birds that are left within the colony, or I firmly believe there would not one be left in five years' time, except among the very few farmers who would care to preserve them. I believe a gentleman in the Beaufort district was the first to domesticate wild ostriches, for the purpose of turning them to account, and his great success has induced others, myself among the number, to follow his example; and now the demand for young ostriches is so great that the purchasers are said to outnumber the birds. The plan adopted for taking the young birds is to watch the nests of the wild parents, where one is fortunate enough to have them on one's own place, and directly they come out of the egg they must be taken away; if they are left for a few days, it is almost impossible to catch them; besides which, I imagine they have as many enemies as other young birds, which probably accounts for the small percentage that are reared in the wild state. As a rule, eighteen or twenty eggs are hatched; there may be fifty in the nest, but the bird cannot cover more than twenty, and after the nest is arranged the surplus eggs are kicked out. The young birds are very easily reared, but great care must be taken that they do not get wet. The down upon them is soon saturated, and they die at once. They must be kept warm at nights, and likewise in the day if the wind is at all keen; when they are three months old they may be gradually hardened by letting them stay out later in the evening, and a little shower of rain will not hurt them. The best food for them while young is lucerne, cut up in a chaff-cutter, and it is all-important that they should have gravel, of which they swallow quantities. I find also that shells and bones broken up are very good for them: it is surprising the quantity of bones they can swallow. When they are three months old they will eat grain, barley, wheat, or Indian corn; I prefer giving them the latter, and they certainly prefer it also, but it must be given with judgment; half-a-pound a day I consider quite sufficient for each bird. As regards pasture for them, the best plan is to keep them on lands that have been cropped, and allowed to lie without being ploughed; all sorts of soft weeds come up, which they eat greedily, and of course when there is an abundance of them they require no other food. This idea is perhaps rather startling to an English farmer; but I must explain that in this country there is only one sowing time in the year, so that for fully six months the lands are lying idle, and I believe the ostriches improve them wonderfully; in fact, I know of no better plan of clearing foul land than by turning in a troop of ostriches. I have now had fifteen months' experience in ostrich farming, and can safely say that there is no other branch that gives such a quick return or is so remunerative. I bought birds six months old at £9 a-head; at eight months old I took out the first feathers, or "chicken-pens," as they are called here. I did not think it worth while to send them to the market, so waited for the next

plucking, seven months afterwards, and sent the two lots together; and they realised a sum equal, after deducting all expenses, to pay 80 per cent. per annum on the outlay. The same birds I shall pluck again shortly, probably this month, and I fully expect to get over 100 per cent., as the plumes are very fine. The next lot I bought I paid more money for, and they were only three months old. The demand was just commencing; now the chickens are counted, and in some cases paid for, before they are hatched. The young birds do not show the slightest fear of man, and are at once as tame as barn-door fowls, and can be driven along the road by keeping a boy in front, far easier than any other stock. They begin to lay at three years old, but do not generally sit until four or five. In the breeding season a cock and two hens are put together in a well-fenced field; they get very savage at this time, and it is dangerous to approach them without a long forked stick to hold them back with. A kick from an ostrich is a serious matter. The attention of ostrich farmers now is drawn to the subject of artificial incubation. As far as I know, only one man in the colony has as yet succeeded in hatching and rearing young birds from the incubator, and it was a long time before he could manage it. There are many difficulties in the way which do not occur in hatching hen and duck eggs, but I imagine these will soon be overcome. My stock consists at present of twenty-seven, but I hope to increase it to forty-five or fifty this summer, as I am so well satisfied with the speculation. I forgot to mention that the cocks and hens take turn about in the nest; the former generally do duty at night, as their plumage is generally better than the hens'. It is wonderful with what regularity they take their turns, within a few minutes of the same time every day. When the young birds are taken away the hens soon begin laying again, and frequently bring out three broods in the season.—“*Feathers*,” *George, Cape Colony, Nov. 15.*—*From the ‘Field.’*

Barnacle attached to a Cork.—I have just received a cork picked up on our beach, having a white metal capsule “Cantrell & Co., Belfast. It is remarkable as having attached to its sides three large barnacles and several small ones.—*Thomas Cornish; Penzance, February 28, 1872.*

Silvery Hairtail in Whitsand Bay.—A single specimen of the silvery hairtail was taken on the 1st February, in Whitsand Bay, near the Land's End, and secured by Mr. John Symons, jun., of Mayon. It is of the usual size and appearance.—*Id.*

Food-plant of *Tæniocampa rubricosa*.—In June last I found a full-grown larva feeding on the seed-vessels of the wild hyacinth (*Endymion nutans*, Druce), which it continued to eat in confinement. The perfect insect

emerged a few days ago, and found to be *Tæniocampa rubricosa*, whose usual food is stated by Hübner to be *Rumex acutus*, and in France it is said also to feed upon *Digitalis*.—*A. G. More*; *March 12, 1872*.

Proceedings of the Entomological Society.

Annual Meeting, January 22, 1872.—A. R. WALLACE, Esq., F.L.S., President, in the chair.

An Abstract of the Treasurer's Accounts for 1871 was read by Mr. Dunning, one of the Auditors, and showed a balance in favour of the Society of £133 13s. 8d.

The Secretary read the Report of the Council for 1871.

The following gentlemen were elected Members of Council for 1872:—Messrs. H. W. Bates, Butler, Grut, Higgins, M'Lachlan, Marshall, Müller, E. Saunders, Stainton, F. Smith, S. Stevens, A. R. Wallace, and Westwood.

The following officers for 1872 were subsequently elected:—President, Prof. J. O. Westwood. Treasurer, Mr. S. Stevens. Secretaries, Messrs. M'Lachlan and Grut. Librarian, Mr. E. W. Janson.

The President read his Annual Address.

Mr. Dunning proposed, and Mr. Weir seconded, a vote of thanks to Mr. Wallace for his Address, and for his services as President during the past year. Mr. Wallace returned thanks.

Mr. Dunning proposed, and Mr. Stainton seconded, a vote of thanks to the other officers for 1871. Mr. Stevens returned thanks.

February 5, 1872.—Prof. J. O. WESTWOOD, M.A., F.L.S., President, in the chair.

Prof. Westwood thanked the Society for electing him to fill the office of President; and nominated Messrs. E. Saunders, F. Smith and H. T. Stainton as his Vice-Presidents for the year.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—‘*Bulletin de la Société Linnéenne de Normandie*,’ vol. viii.; 2nd Series, vols. iii. and iv.; presented by the Society. ‘*Transactions of the Linnean Society of London*,’ vol. xxvii., pt. 4, and vol. xxviii., pt. 1; by the Society. ‘*Catalogue of Dermaptera Saltatoria*,’ parts iv. and v., by Francis Walker; ‘*Catalogue of Hemiptera Heteroptera*,’ part iv., by Francis Walker; by the Trustees of the British Museum. ‘*The Transactions of*

the Entomological Society of New South Wales,' vol. ii., part 3; by the Society. 'Stettiner entomologische Zeitung,' xxxii., Nos. 10—12; xxxiii., Nos. 1—3; by the Society. 'L'Abeille,' 1871, livr. 12; by the Editor. 'The Silk Supply Journal,' No. 13; by the Silk Supply Association. 'Lepidoptera Exotica,' part xi.; by E. W. Janson. 'The Canadian Entomologist,' vol. iii., Nos. 9—12; by the Editor. 'Description de Six Coléoptères éclos à Paris,' 'Monographie du genre Rhinoclinus,' by the Author, M. A. Chevrolat. 'Description d'une Anomalie observée chez un exemplaire de *Hestia Belia*, Westwood; by the Author, M. L. Quaedvlieg. 'Catalogue synonymique et descriptif d'une petite collection de Fourreaux de larves de Phryganides de Bavière,' by the Author, M. A. Preudhomme de Borre. 'On the Origin of Insects,' by the Author, Sir J. Lubbock, Bart. 'A Letter concerning Deep-Sea Dredgings, addressed to Professor Benjamin Peirce, Superintendent United States Coast Survey,' by the Author, L. Agassiz. 'Nye Dybrands crustaceer fra Lofoten,' af G. O. Sars; 'Bidrag til Kundskab om Christianiafjordens Fauna,' ii., af Michael Sars; 'Efter Forfatterens efterladte Manuskripter samlet og udgivet af hans Son G. O. Sars,' 'Carcinologiske Bidrag til Norges Fauna—I. Monographi over de ved Norges Kyster forekommende Mysider,' Forste Hefte, af G. O. Sars; by M. G. O. Sars. 'Om en i Sommern 1869 foretagen entomologisk Reise gjennem Ringuik, Hallingdøl og Valdus,' af H. Siebke; by the Author. 'Crustacea amphipoda borealia et arctica,' auctore Axel Boeck; by the Author. 'Cistula Entomologica,' part iv.; by E. W. Janson. 'The Zoologist' for February; by the Editor. 'The Entomologist's Monthly Magazine' for February; by the Editors. 'Monographie der Passaliden,' von Dr. J. J. Kaup; by T. Compton, Esq. 'Tijdschrift voor Entomologie,' Ser. 2, tome vi., Nos. 2—6; by the Entomological Society of the Netherlands. 'Sepp's Nederlandsche Insecten,' Ser. 2, tome iii., Nos. 3—12; by Dr. S. C. Snellen van Vollenhoven. 'The Position of the Caddis Flies,' by the Author, A. S. Packard, jun., Esq. 'A List of the Species of Sphingidæ in the Collection of the Royal Dublin Society,' by W. F. Kirby, Assistant in the Museum; by the Author. 'Contributions à l'Histoire Naturelle et à l'Anatomie de la Mouche-feuille des Iles Seychelles,' *Phyllium crurifolium* (Audinet Serville), *Mantis sicciifolia* (Linné), par le Dr. N. Joly; 'Sur l'Hypermetamorphose de la *Palingenia Virgo* à l'état de Larve; analogies de cette larve avec les Crustacés,' par le Dr. N. Joly; by the Author.

By purchase:—'The Zoological Record for 1870.' 'Catalogus systematicus Dipterorum Europæ,' auctore R. J. Schiner, Dr. 'Skandinaviens Heterocer-fjärilar, beskrifne af H. D. J. Wallengren Första delen.' 'Hymenoptera Scandinaviæ,' auctore C. G. Thomson, tome i. 'De Vlinders van Nederland, Macrolepidoptera, systematisch beschreven door P. C. T. Snellen.'

Exhibitions, &c.

Mr. M'Lachlan brought before the notice of the meeting an illustration of the manner in which the ravages of Aphides are checked by parasitic Hymenoptera. He exhibited a portion of poplar-twigg from Dr. Knaggs's garden at Kentish Town, which had been occupied by a large family of dark-coloured Aphides; of these nothing now remained but their empty inflated skins, each of which presented a circular opening, whence the parasite (probably an Aphidius) had emerged, the whole bearing much resemblance to a collection of empty egg-shells of some large Lepidopterous insect. The portion of poplar-twigg was less than an inch in length, and on it were nearly one hundred of these empty skins.

Mr. Herbert Druce exhibited a large selection of Rhopalocera from Costa Rica, being part of a collection formed in that country by Dr. Van Patten. In all there were probably nearly fifty new species in the collection, including four of *Papilio*, three of *Morpho*, three or four of *Leptalis*, a new genus of *Satyridæ* allied to *Pronophila*, &c., &c. These are in course of description by Mr. Butler, in '*Cistula Entomologica*.'

Prof. Westwood exhibited specimens and drawings of various species of *Acaridæ* and other aberrant *Arachnida*, either entirely new to Science or not previously observed in this country, as follows:—

1. Fam. *Trogulidæ*. A small species of the genus *Trogulus*, differing from any of those figured by Koch, captured by the Rev. O. P. Cambridge in moss at Bloxworth, Dorsetshire; described by Prof. Westwood as *T. rufitarsis*.

2. Genus *Stylocellus*, *Westwood*. A new genus pertaining to the recently instituted family *Cyphophthalmidæ* (Joseph, in *Berl. Ent. Zeit.*, vol. xiii.), founded upon a species (*S. sumatranus*, *Westw.*) from Sumatra, forwarded by M. Snellen van Vollenhoven as a new species of *Trogulus*. Differing from *Cyphophthalmus* (the type of which is a minute species from the caves of Carniola) in having the chelicere shorter than the palpi, and with the terminal dactyls of the former simple and very acute, and the cephalothorax without a deeply incised emarginate mark, each side being produced into a short obtuse horn. Long. $7\frac{1}{2}$ mm. A second species (*S. javanus*, *Westw.*) is in the Collection of the British Museum.

3. *Argas reflexus*, *Latreille*. Type of a family and genus not hitherto recorded as British. A colony of this species had been found by Mr. Gulliver under a stone in the crypt of Canterbury Cathedral. It ordinarily infests pigeons on the Continent, and the colony had probably originated from individuals that had fallen from the flocks of those birds frequenting the Cathedral. (Mr. F. Smith added that specimens of the dog-tick had been forwarded to him that had been found in the same Cathedral, and he has since furnished information to the effect that the British Museum possesses an example of the *Argas* from the same building.)

4. *Argas noctulæ*, Westw. Perfectly round in outline, the disc of the cephalothorax with deep and large punctures widely scattered, and with radiating punctures towards the margins. Long. 5 mm. Taken from off a gentleman in the church of Whittlesford, Cambridgeshire, having evidently fallen from the larger noctule bat, of which two young individuals had dropped close to the gentleman on whom it had been found, and whom it attempted to bite. Forwarded to Prof. Westwood by Mr. F. Bond. It is closely allied to the *Argas pipistrellæ* of Audouin, but is very much larger.

5. *Argas persicus* ("the poisonous bug of Persia"). The specimen exhibited had been forwarded to Prof. Westwood by the late Herr Westermann, of Copenhagen, who had received it from Col. Motschulsky.

Papers read, &c.

Major Parry read "Descriptions of some new species of Lucanoid Coleoptera, with remarks upon the species comprising the genus *Cantharolethrus* of Thomson." The new species (which were exhibited by Major Parry) were *Cantharolethrus Buckleyi* from Ecuador; *Sphænognathus armatus* from Columbia; *Leptionopterus affinis* and *L. paranensis* from Pará.

Mr. Bates remarked that during his residence at Pará he had never found any species of this division; it was therefore extremely interesting to him to see the two species now exhibited.

M. Snellen van Vollenhoven communicated a description and figure of an insect belonging to the same division from Java, under the name *Prosopocœlus Rosenbergii*.

Prof. Westwood read a description of a further addition to the division, and exhibited a figure thereof. This was named *Ceratognathus rufipennis*.

February 19, 1872.—Prof. J. O. WESTWOOD, M.A., F.L.S., President, in the Chair.

Election of Members.

The following gentlemen were balloted for and elected Annual Subscribers to the Society:—Dr. W. H. Ransom, F.R.S., of Nottingham; H. W. Livett, Esq., M.D., of Wells, Somerset; J. H. A. Jenner, Esq., of Lewes; and G. B. Rothera, Esq., of Nottingham.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—'Bulletin de la Société Impériale des Naturalistes de Moscou,'

1871, Nos. 1 and 2; presented by the Society. 'The Journal of the Quekett Microscopical Club,' No. 17; by the Club. 'Recherches expérimentales sur la position du centre de gravité chez les Insectes, par M. Félix Plateau'; by the Author.

Exhibitions, &c.

Mr. F. Smith called attention to the fact that mice are in the habit of devouring the dead pupæ of *Bombyx mori* contained in what is known as 'silk-waste,' viz., the inner cocoon remaining after the external silken envelope had been wound off. This had been brought to his notice by one of his sons as occurring in a London silk-warehouse, and a parcel of the said 'waste' brought to him afforded an instance of a double cocoon, or, rather, a very large cocoon containing two pupæ lying free within it, and evidently constructed by two larvæ working in concert.

Mr. F. Moore said the cocoons were those of *Bombyx mori* from China. Double cocoons were not of infrequent occurrence; and occasioned some additional trouble in the winding process. Mr. Jenner Weir alluded to the occurrence of double cocoons of *Eriogaster lanestris*; and Mr. Müller remarked on an analogous occurrence among species of sawflies, though this was scarcely a parallel instance, inasmuch as the sawfly larva merely used one side of an already constructed cocoon as a foundation for its own, and did not act in concert with its fellows.

Mr. Butler exhibited drawings (and a dried specimen) of parasitic larvæ that had emerged from the bodies of caterpillars of *Pygæra bucephala*, which they almost equalled in size. He had not been able to determine the insect to which the larvæ belonged, as these latter died after spinning a quantity of threads, partly black, partly white, on the surface of the earth in the vessel in which they were placed. It was suggested that they probably pertained to some large species of the family *Ichneumonidæ*.

Dr. F. Buchanan White communicated the following extracts from his note-book respecting the habits of a species of ant in Italy, bearing upon Mr. Moggridge's remarks on the storing of seeds by ants at Mentone, as noticed by Mr. F. Smith at the meeting on the 1st of January (See Proc. Ent. Soc., 1871, p. xlvii):—

"Capri, June 3, 1866. In the afternoon to the Punta Tragara, where a colony of ants afforded us much amusement. These little insects had a regular road, made by cutting away the grass and other plants in their way. This road was about one inch and a half wide and several yards long, and led to a large clump of plants in seed. Along this road a long train of ants were perpetually travelling to the nest (or formicarium), bearing with them pods of Leguminous plants, seeds of grass and of Compositæ (*Chrysanthemum segetum*), &c. The perseverance with which a single ant would tug and draw a pod four times his own length was very interesting; sometimes

three or four ants would unite in carrying one burden. Near the formicarium was a great mass of *débris*, consisting of empty pods, twigs, emptied snail-shells, &c., cast out by the ants. The seeds appeared to be stored inside the nest, as in one that I opened the other day I found a large collection. . . . The species was a black ant; the formicarium was under ground."

Mr. Horne had observed, in the open plains of India, a similar habit in species of ants found there. Their pathways were often thirty feet in length, and formed by cutting away the grass, &c., as noticed by Dr. White, and the ants were constantly seen carrying full grass seeds into their nests: the quantity of seeds was sometimes so great that five or six handsfull could be collected from one nest.

Prof. Westwood exhibited the type specimens of the creatures upon which Latreille founded his Crustaceous genus *Prosopistoma*, with magnified drawings of the same, and remarked thereon with reference to the statement of Dr. Joly (as mentioned at the previous meeting), that these creatures (which were from Madagascar) and 'le Binoche' of Geoffroy, from the neighbourhood of Paris, were immature conditions of species of *Ephemeridæ*. The creatures had no perceptible mouth organs, and in this respect did not in any way accord with the earlier states of any species of *Ephemeridæ*; neither did the structure of the legs, though those members were formed differently from anything known in Crustacea. In external form, especially in the largely developed carapace, there was some analogy with the pupa of *Bætisca obesa*, Say, one of the *Ephemeridæ*, as described and figured by the late B. D. Walsh, but there was little other similarity in the two forms.

Mr. M'Lachlan said he could not reconcile the structure of these types of *Prosopistoma* with the idea that they pertained to the *Ephemeridæ*. He exhibited a series of examples, in alcohol, of *Boreus californicus*, sent to him by Dr. Packard, the describer of the species, which was remarkable for its large size.

Mr. Albert Müller read the following remarks:—

"In a letter I lately received from Mr. Peter Cameron, jun., of Glasgow, the writer asks 'Have you noticed that the galls on willows overhanging rivers are only on the leaves above the land, very few, if any, being on the leaves over the water? This is the case in this neighbourhood.' The gall referred to by my correspondent is produced by *Nematus Vallisnieri*, Hartig. I certainly have seldom, if ever, seen the galls on boughs overhanging water, but the question requires further investigation. Baron von Osten Sacken has recorded the same thing of the American plum weevil (*Conotrachelus nenuphar*), which, according to him, avoids trees overhanging water when depositing its eggs. The question of ovipositing insects thus avoiding trees in positions which may be dangerous to their brood has some practical

bearing, where the conservation of foliage or fruit crops is of importance. I have myself witnessed that certain water beetles, namely *Dytiscus marginalis* and several species of *Colymbetes*, have dropped down on hothouse frames protected by glass. They made this mistake by taking the glass to be their native element; theirs was an error of sight. Assuming that insects injurious to fruit-trees often discern their positions by sight, it seems worth while to offer the suggestion that, the means which attracted the water beetles might possibly be made use of for keeping away such insects as avoid water, and which might possibly be scared away by any object simulating that element."

New Part of 'Transactions.'

Part v. of the 'Transactions' for 1871, completing the volume, was on the table.

March 4, 1872.—Prof. J. O. WESTWOOD, M.A., F.L.S., President, in the Chair.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Royal Society,' No. 131; presented by the Society. 'Coleopterologische Hefte,' Hest VIII.; by the Editor, Baron E. v. Harold. 'The Entomologist's Monthly Magazine,' for March; by the Editors. 'The Zoologist,' for March; by the Editor. 'The Canadian Entomologist,' vol. iv., No. 1; by the Editor. 'The Entomologist,' vol. v., and Nos 99—101, January—March; by the Editor.

By purchase:—Gemminger et de Harold, 'Catalogus Coleopterorum,' tom. viii., pars. 1. Matthew's 'Trichopterygia illustrata et descripta.'

Election of a Member.

Ernest Kaye, Esq., of Oakfield Road, Penge, was balloted for and elected a Member of the Society.

Exhibitions, &c.

Prof. Westwood exhibited living examples of *Argas reflexus*, from Canterbury Cathedral, of which he brought dried examples before the meeting on the 5th ultimo; also another species of the same genus collected by Dr. Livingstone in Central Africa, remarkable for the rounded tubercles with which its surface is studded. This latter species, according to Dr. Livingstone's observations, enters the feet of the natives, between the toes, causing pain and inflammation.

Mr. S. Stevens exhibited an apparently undescribed species of Phycita, taken near Gravesend, bearing much external resemblance to certain species

of *Crambus*, and especially to *C. perlellus*, of which it possessed the pearly lustre.

Mr. F. Smith stated that he had received a further communication from Mr. J. T. Moggridge, now at Mentone, respecting the storing of grain by ants of the genus *Aphenogaster*, as mentioned at the meeting on the 1st of January. Mr. Moggridge had confined a colony of the ants in a glass vessel, so as to observe their habits, and he was able to confirm his previously expressed belief that they feed upon the stored grain.

Mr. H. W. Bates exhibited a number of British species of the genus *Carabus*, arranged side by side with the species which were their nearest representatives in Eastern Siberia, as illustrations of the wide difference which exists between the Coleopterous fauna of Eastern Siberia and of Western Europe. He added that of about fifty species of *Carabus* inhabiting Eastern Siberia only one (*C. granulatus*) was found also in Western Europe, the other forty-nine being quite distinct. He recalled the attention of the Society to the wide acceptance which the zoo-geographical division of the globe, as propounded by Dr. Slater, had received amongst zoologists. An amendment of these divisions had been since proposed by Prof. Huxley, who, however, did not change that portion of Slater's generalization which concerned the subject now under consideration, and which established the whole of Europe and Northern Asia as one great division, termed the "Palearctic." This division appeared to apply very well to the classes of birds and mammals, but not to insects, as was shown by the great amount of difference existing in the genus *Carabus* and in other genera of Coleoptera. Each species exhibited was accompanied by that to which it was most nearly allied. Thus *C. nitens* was represented in Eastern Siberia by *C. tuberculosus*; *C. clathratus* by *C. canaliculatus*; *C. arvensis* by *C. conciliatus*; *C. monilis* by *C. regalis*, &c. No greater amount of difference existed between Northern America and the Palearctic region, although the former had been separated as a distinct region, termed the "Nearctic." In conclusion, Mr. Bates remarked that he considered no philosophical importance could be attached to vague general divisions of the earth. What was really important was to ascertain the districts which presented a large amount of peculiar forms, and then to investigate the causes and origin of this peculiarity in each case.

In the course of the discussion that followed, Prof. Westwood remarked upon the desirability of ascertaining the range of each species, and of determining the amount of variation or modification presented by it in different districts: and he called attention to the similarity between the insects of Eastern Siberia, Japan, and Western America. Dr. Sharp said that the Spanish *Carabi* were mostly peculiar to the Iberian peninsula, though some were species known to have a wide range, but modified in this district. He considered that species quite peculiar to mountains were

necessarily restricted in their range, whereas those found in the plains were of wide distribution. He remarked that all the species of the genus *Oxytelus*, seen by him, from Eastern Siberia, were specifically identical with those of Britain, whereas of the genus *Bledius* no species was common to both countries.

Messrs. Weir, Müller, Janson, M'Lachlan, &c., also took part in the discussion, and the two latter remarked on additional instances of the occurrence of allied forms in Eastern Asia and North America, as exhibited in the genus *Pteronarcys* among the Neuroptera, and Cupes in Coleoptera.

Mr. Müller exhibited galls of an *Acarus*, probably a *Phytoptus*, from Bombay, concerning which he read the following notes:—

“My friend Mr. F. Moore has kindly presented me with some leaves of *Cinnamomum nitidum*, from Bombay, exhibiting on their upper surface isolated, rusty-brown, smooth and hard pouch-shaped excrescences, each of the size of a large pin's head. These excrescences are hollow, and provided on the under side of the leaf with an opening equal in diameter to the basin on the upper side. The sight of these objects enables me to assert the existence in India of a species of gall-producing *Acaridæ*, probably four-footed, and allied, or perhaps belonging to the extensive European and American genus *Phytoptus*. In size and structure these *Cinnamomum* pouches tally with those of the European *Phytoptus* gall, called by Bremi *Cephaloneon solitarium*, of which my collection contains British and Continental specimens. But they differ from the latter in being less restricted at the basis, with both inside and outside quite smooth, and in exhibiting on the under side of the leaf a slight rim surrounding the open pouch. The absence of all pubescence from the pouch chiefly distinguishes them from the European form, and this character is quite in accordance with the highly polished, smooth, outer texture of the healthy leaf of *Cinnamomum*.”

Papers read.

Mr. Baly communicated descriptions of various new species of *Cassididæ*, from Ecuador and Nicaragua.

Mr. W. F. Kirby communicated “Notes on the Diurnal Lepidoptera described by Jablonsky and Herbst in their ‘*Natursystem aller bekannten Insecten*’.”

Mr. Dunning read a memoir on the genus *Acentropus*, in which he brought together a *résumé* of all that had been written on the subject. After commenting upon the opinions expressed by various authors as to the position of the genus, he arrived at the conclusion that it is truly Lepidopterous; and, furthermore, he had failed to find valid reasons for considering that more than one species existed, for which he retained the name *Acentropus niveus*.—*R. M'L.*

*A Cuttle-fish at the Crystal Palace Aquarium.**

By EDWARD NEWMAN.

THE COMMON CUTTLE (*Sepia officinalis*).(N.B. The length along the back, exclusive of the head, is $9\frac{1}{2}$ inches.)

THE arrival of a living cuttle, a real *Sepia officinalis*, at the Crystal Palace Aquarium is an event that should be chronicled in the largest type and the most florid style that the 'Zoologist' can command. Had I known prospectively of his advent I should probably have heralded his approach with an appropriate flourish of trumpets, still meaning *type*-ical trumpets; but the little stranger arrived quite unexpectedly from Plymouth, and I was only apprised of the event subsequently: he had not, like Thomas Campbell's events, cast his shadow before him, which phenomenon I have always thought must in a great measure depend on the direction in which events are travelling: I presume Thomas Campbell's were always retreating from the sun; if otherwise, they would have found their shadows invariably keeping in the

* I ought perhaps to say that this admirably arranged Aquarium, which is under the superintendence of Mr. W. A. Lloyd, possesses several specimens of Octopus and Eledone in the most perfect health, but only this one of *Sepia*. Naturalists have now an opportunity, very rarely enjoyed, of studying the Cephalopods in their natural element.

rear. It was a red-letter day for the aquarian, and I fear that the red-letter label over his head attracted more attention than the animal itself: it ran thus—

NORWEGIAN LOBSTERS

AND

STICKLEBACKS

and had I been appointed umpire I think I could scarcely have decided whether the majority of votes were in favour of his being a lobster or a titler: I must, however, abandon that moot point to the interlocutors.

The first thing that struck me on reaching the aquarium was the total dissimilarity between the new arrival and any representation I had seen of *Sepia officinalis*; and yet these portraits are as numerous as those of the Sumatran rhinoceros or the Claimant to the Tichborne estates, and I think pictorial popularity can scarcely go farther. It is utterly impossible that the artist, in taking any existing portrait of the cuttle, had the living animal before him: there is, moreover, so great a family likeness in these portraits of *Sepia*, as to suggest the idea that they have all been copied from some engraving of remote antiquity, and that *that* engraving was intended as a diagram to show what a cuttle would probably be after death, rather than to give an idea of what he is when living.

The creature floated on the surface of the tank, with a very small portion of its back above the water; it appeared to be in a feeble state, and although capable of displaying spasmodic activity at intervals, and of altering its position at all times, it evidently did not possess sufficient muscular power to enable it to dive or sink to the bottom; it may be said to have no specific gravity, and being lighter than water it was compelled to float on the surface. Its position is exactly represented in the figure; the posterior extremity is highest; the head is enormous, and has an appearance of ponderosity that reminds one of an elephant's; the eye is of moderate size, and the creature seems to have the power possessed by cats of contracting the pupil at pleasure; possibly a membrane which evidently covered the eye may, at the will of the animal,

assist in producing this effect; the visible arms (or legs) are eight in number, and are associated in two clusters or sections, four in each; the exterior leg on each side is nearly three times as broad as the others, and is beautifully decorated with zebra-like markings, chocolate-brown and white; the second leg, still counting from the outside, is next in size, and like the first is decorated with zebra-like markings, yet much smaller and much less conspicuous in colour; the third on each side is still smaller and still less distinctly striped, and the central pair as the animal faced me are the smallest, narrowest and least conspicuously marked,—still on these there is an indication of similar markings. All these arms (or legs) are folded or convolute, each having a linear, longitudinal opening towards the cavity of the mouth or cibarian organs; the inner surface of these organs is furnished with small circular petiolate suckers, which appear to be arranged in four longitudinal series, but these were only visible when the creature moved its arms, which it constantly did, curling up the extremities: these arms are crowded together and held in a pendant position; their motion was incessant, and I rather (perhaps injudiciously) trust to books in mentioning four as the number of series in which the suckers are arranged.

All naturalists are aware that in figures of the cuttle the animal is represented as furnished with two tentacular arms, the shaft of which is round and vermiform, and the extremity dilated and spatulate, and having its under surface furnished with suckers: these very striking implements are represented as floating gracefully behind the animal as he is supposed to glide through the water, while the eight more rigid and pointed arms seem to be piercing the water and acting as pioneers to remove all obstacles out of his way. In the living animal there is no indication of such tentacular arms; they exist, but are entirely concealed; supposing them extended when the animal is swimming, and further, supposing them flaccid and capable of partaking of the movement of the body, they would follow it in a contrary direction to that represented, because all the cephalopods swim backwards. I cannot doubt that the eight *arms* (or legs) of the cuttle are homologous with the *foot* of gasteropod mollusca, but it must be admitted that the nomenclature of these parts is at present vague and unsatisfactory; and it will require great pains on the part of common-sense writers to dissipate the confusion that now exists: common-sense writers will not

accept such paradoxes as *arms* (or legs) being part of the *foot*, and so forth. Still it is unquestionable that this garniture of arms or legs is neither more nor less than the exact representative of the smooth flat surface on which a snail glides, the only difference being that it is cut up into eight subequal divisions, all of which are prehensile.

The dorsal surface is soft to the touch, but when pressed with the finger the hard bone or shell in the interior is very plainly to be felt, and is apparently very near the surface; the covering of the back I believe to be the homologue of the mantle in other mollusks, and its free margin, which scientific naturalists describe as "two fins" because of its constantly undulating motion, is dilated continuously along the sides and is extremely flexible: it is fixed anteriorly, and partially covers the head like a Mary Stuart bonnet, and at the posterior extremity it has a sinus or notch. The colour of this mantle is chocolate-brown, with numerous transverse bars of a creamy whiteness: these are rather crowded and indistinct in the middle of the back; they are larger and beautifully distinct towards the margin, and are frequently once, and sometimes twice, divided before they reach the free margin of the mantle, which is entirely destitute of this peculiar decoration, but has very pale vermicular markings which assume the appearance of minute indistinct circles.

The ventral surface is tumid and oval: its colour opalescent: as viewed from beneath it is wonderfully beautiful; its tint changes with every motion and almost every moment; it is absolutely impossible to observe and describe any continuous tint, so fugitive are the shades. Moreover, in every part of the surface there is a rhythmical change of colour corresponding doubtless with the pulsatory action of the arterial system, which, of course, is concealed from inspection: the mouth, described as being situated in the midst of the legs, is also concealed; but there is a white funnel on the under side of the neck, and this also has a rhythmical motion corresponding with that of the changes in colour: this funnel seems to be used for the passage of excrement and also of ink, a vast quantity of the matter called by the latter name having been discharged on the morning of the 1st of April, and thus affording an opportunity of observing a phenomenon which naturalists have rarely witnessed. The object of this discharge has hereafter to be considered: the explanation given by the philosophers that it is

simply a means of concealment, just as they employ their own ink to conceal their own want of knowledge, is scarcely satisfactory. The ink of a cuttle-fish is a more substantial material, less fluid than writing ink: it does not mix freely with water, and possesses that curious property which in milk is called rosy.

EDWARD NEWMAN.

PS. The cuttle is since dead; and it is possible I may have something to say of him after a *post mortem* has taken place: at present I will only say that the long tentacles which form the sensational feature in all pictures of cuttle actually exist; but that during my repeated visits he had stowed them away somewhere in the vicinity of his mouth, which is probably the custom with living cuttles in general. I shall feel much indebted to any naturalist who will refer me to any figure of a living cuttle.—E. N.

Description of a White's Thrush obtained in Castle Eden Dene.

By JOHN SCLATER, Esq.

I SEND you full particulars of Mr. Burdon's specimen of White's thrush, compared with a specimen of the young of the missel thrush in my possession. The bird died on the nineteenth day after its capture, having received greater injuries from shot than I expected: the shoulder-bone had been broken from the *blow* of the shot (as the flesh was not shot through); it had strongly knit together, but was half an inch shorter than the other: the bird was a male, was very bold, and fed from my hand three days after it was caged. It ate well up till the day it died, and no doubt would have lived but for the injuries: had I been aware of these injuries I would have delayed taking dimensions of it, as I was obliged to handle it a great deal. It once or twice gave a harsh scream when handled, but I heard no note: it used the perch, always roosting upon it. The markings were all well-defined, and alike on each side, so far as its damaged state would allow me to judge, the primaries being all shot off one wing; the third feather of the other wing was gone also, and there were only eight feathers left in the tail.

You will see from the different measurements the difference in the wing-coverts, especially the under coverts, the legs, toes and

claws; in fact it is totally different, and nothing like any missel thrush I ever saw, and although differing from Yarrell's description it was near enough to leave no doubt with me of its being White's thrush, and but for your asking for it I would never have troubled to write the difference. I may add, as I see a note in the 'Zoologist' (S. S. 2942) by Lord Clifton, in which is mentioned the singular resemblance this bird has to the woodcock on the wing, that this is exactly what Mr. Burdon told me,—he thought it was a woodcock when he first saw it. I hope the comparative description will answer your request, and that you will give it a place in the 'Zoologist.'

WHITE'S THRUSH.

Length of the bird eleven inches and a half.

Length of the beak one inch and five-sixteenths.

Length of wing from carpal joint six inches and a half (remember the third feather of the wing is wanting).

Length of the tarsus one inch and a half.

The upper mandible is brown at the point and base, lighter in middle, the edges pale yellow; the under mandible is pale yellow-brown, darker at the point.

The feathers on the upper part of the head and neck are brown, with yellow ends and tipped with black; those of the back, scapulars and upper tail-coverts are grayish brown, with pale yellow ends and a crescentic tip of black, the shaft of each feather yellow.

The smaller wing-coverts have broad yellow ends pointing up the shaft, which is yellow; the lateral webs black.

YOUNG OF MISSEL THRUSH.

Length of the bird ten inches and a quarter.

Length of the beak one inch and one-eighth.

Length of wing from carpal joint five inches and five-eighths.

Length of the tarsus one inch and one-eighth.

The upper mandible is dark brown; the under mandible is paler brown, palest at the point.

The feathers of the head, neck and lower back are a mottled mixture of pale or grayish brown; those of the back are pale brown, lighter up the shaft, the ends dark brown.

The smaller wing-coverts are pale brown, with a light streak up each side of the shaft (which is the same colour), nearly the length of the feather, tipped with dark brown.

The greater wing-coverts are dark brown with yellow ends, together forming two oblique descending bars.

The feathers of the spurious wing are light yellow-brown, tipped with black, forming an oblique descending bar. The wing-feathers yellow-brown on the outer web, brownish black on the inner web, each feather except the outer one having a white patch near the base, about an inch long, with dark brown ends, the shafts black.

The four centre tail-feathers are uniform pale brown; the others darker in the webs but lighter at the ends, and of these the outer feathers are the lightest.

The feathers of the chin and throat are white, slightly tipped with black; from the lower edge of the under mandible descends a narrow dark streak; the ear-coverts are deeply tipped with black, forming a patch.

The neck, breast, and all the under surface white, tinged on the breast and flanks with yellow, all the feathers having a black semilunar tip before the wing on each side; the colour of the back extends forward towards the breast.

Anterior under wing-coverts white from the base to half the length of the feathers, the other half dark brown; the feathers next in order are brown from the base half their length, the other half white, together forming a large brown patch.

The greater wing-coverts are pale brown, the outer webs margined with buff, which turns round the tip and runs up the shaft on the fine feathers next the body.

The feathers of the spurious wing are brown, the outer webs margined with buff, deepest in the middle. The wing-feathers are brown, the outer webs lighter and margined with buff; the primaries being very slightly edged with pale brown, which turns round the tips.

The two centre tail-feathers a uniform pale brown; the others are darker on the inner webs, except the outer feathers, which are lighter, and all are lightest at the tip.

The chin and throat are white; from the lower edge of the under mandible descends a narrow dark streak; the ear-coverts are tipped with brown.

The neck, breast, and all the under surface white, tinged on the breast and flanks with buff, each feather having a nearly round tip of very dark brown.

Under wing-coverts white.

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| <p>Under surface of the wing-feathers light brown, and all except the outer or second feather have near the base a white patch about an inch in length, forming a broad white bar across the wing, when it is spread.</p> <p>Under tail-coverts white, slightly tipped with brown; under surface of the tail-feathers grayish brown, shafts white.</p> <p>Legs and toes pale brown, the claws rather lighter.</p> | <p>Under surface of the wing-feathers uniform gray, rather darker on the primaries towards the ends.</p> <p>Under tail-coverts pale brown; under surface of the tail-feathers uniform grayish brown, shafts white.</p> <p>Legs and toes pale brown, the toes rather the darkest; claws dark brown.</p> |
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JOHN SCLATER.

Castle Eden Castle, April 9, 1872.

[I am much obliged for this note; it is exactly what I desired: nothing can tend so directly to settle questions of this kind as careful comparison of specimens that are authenticated as British. I do not dismiss the question of certain Asiatic species visiting Britain; *that* question has also a great interest; but the question to which I more particularly desired attention was this:—Are the so-called British-killed specimens of White's thrush identical with the young of our familiar missel thrush? Careful papers like this of Mr. Sclater's will go a good way towards settling this question in the negative.

I am at liberty to mention that Professor Newton is now engaged on a very full investigation of the subject, preparatory to the publication of the fourth part of his edition of Yarrell's 'History of British Birds,' which will appear very shortly; so that it is desirable that we should be in possession of Mr. Newton's opinion before expressing any of our own. In the mean time I shall be greatly obliged for any communications touching the facts of the case; for it is quite impossible to obtain too much information on any subject if we sincerely desire, as every naturalist must, that our decision should be accepted as final.—*Edward Newman.*]

Variety of the Missel Thrush.—I have added to my collection a variety of the missel thrush, which was shot at Strumpsham on the 18th of December, and omitted from the "Ornithological Notes from Norfolk" for that month. It is a pale isabel colour, with all the markings on the breast quite perceptible.—*J. H. Gurney, jun.; Northrepps, Norwich, April 22, 1872.*

Ornithological Notes from Norfolk.

By HENRY STEVENSON, Esq., and J. H. GURNEY, JUN., Esq.

(Continued from Zool. S. S. 2984.)

JANUARY, 1872.

French Partridge.—Jan. 15. Of fifteen partridges shot on Mr. Buxton's land at Trimmingham, thirteen were Frenchmen. You always get most Frenchmen "driving," and since this system of shooting has come into use, these much-maligned birds have become far more popular.—*G*.

Robin.—Jan. 16. The fine day tempted three robins into song, and since then numbers have been heard in all directions round Cromer.—*G*.

Longeared Owl.—Jan. 17. Hewitt, the Trimmingham keeper, showed me six sitting in a small Scotch fir (as well as two tawny owls in another Scotch fir touching it, which I believe had strayed from my own plantations, where there were a pair up to the 10th). I should not suppose these were a family party, although three nests, two of five and one of six, were hatched out last year, as the keeper says they bred in April, and similar congregations have been observed in Sussex in March (*cf.* Zool. pp. 88, 166), which one would naturally expect to have been migratory. For some months past he had seldom passed the tree without seeing four, and on one occasion six. The owner does not allow them to be destroyed, and it would be a good thing if other game-preservers would imitate him. By putting boughs over his coops the keeper manages to protect the young pheasants, and he assured me that he lost very few. He informed me that the owls preferred Scotch firs to sit in, but silver firs to nest in.—*G*.

Shorteared Owl.—Some four or five specimens were brought into Norwich to be stuffed about the middle of this month.

Kittiwake.—Jan. 31. An old and a young kittiwake in Norwich market. The major part of these birds migrate in the winter, and as there are no breeding-places in Norfolk the gulls generally (with the exception of the blackheaded) are comparatively scarce in summer.—*G*.

Whooper.—About the middle of this month a single wild swan of this species was brought to Norwich for sale.

Bridled Guillemot.—Jan. 31. I saw in the market, together with some old and young razorbills, three guillemots in winter

plumage, two of which turned out to be bridled ones. They had been sent up from Cromer, and were shot some few miles out at sea, off that portion of the coast. Nothing can convince me that the so-called bridled guillemot is a species after the evidence adduced by Muller in his 'Bird-fauna of the Færoes' ('Ibis,' vol. v., p. 469), and by Mr. Harvie-Brown (Gray's 'Birds of the West of Scotland,' p. 426).—*G.*

FEBRUARY.

Great Crested Grebe.—On the 1st some birds shot at Weybourne were sent in to Cromer to be cut up. A friend brought me one, which was a fine old razorbill,—a species which has been unusually abundant,—and the foot of another, which I immediately recognized as a great crested grebe's.—*G.*

Shorteared Owl.—This species has been unusually plentiful. One birdstuffer in Norwich received eight, in about ten days' time, during the present month.

Peregrine Falcon.—Feb. 2. As the keeper at Hempstead (near Holt) was standing near the decoy pond, no longer used as such, a bird of this species flew past, and was shot by him. It is rather a curious coincidence that on the 1st of December, 1865, he shot one in just the same place. The next morning he observed a second strike at a coot which was swimming on the Selbrigg pond. The coot dived, and the bird flew into a tree. The one he obtained was a female, beginning to assume the adult plumage.

Wood Pigeon.—Feb 4. A white one was seen at Keswick, and since at Hethersett, where some one is reported to have offered a sovereign for it.—*G.*

Blackbird.—Feb. 5. A blackbird's nest with three eggs was taken at Southrepps. The first egg was reported to have been laid on the last day of January.—*G.*

Wood Lark.—Feb. 21. Mr. Upcher reports wood larks in full song at Feltwell, near Brandon.—*G.*

Thrush.—Feb. 28. Saw a nest with four eggs in the garden at Northrepps.—*G.*

Woodcock.—About the middle of this month these birds, which had been extremely scarce during the autumn and winter, were met with in various localities. Possibly an early return flight, owing to the extreme mildness of the weather.

Sniew.—A fine adult female was killed about the 24th, but wild-fowl of all kinds have been extremely scarce.

Early Spring.—The effects of the unusually mild weather that has characterized the present month have been shown both in forward vegetation and the pairing and nesting of birds. Nests and eggs of thrushes, blackbirds, hedgesparrows and robins are reported from various parts of the county.

Waxwing.—A single specimen was killed in this county towards the end of February. A fine adult male, with six and eight wax tags on the wings.

MARCH.

Bewick's Swan.—An adult bird, shot at Sutton, was offered for sale in Norwich on the 11th.

Spotted Rail.—An early migrant of this species was picked up on the 8th, under the telegraph wires. The wire is about twenty-five feet above the ground, and there is no mere or stream in the vicinity. It was brought to me as a "quail," but whether that can be regarded as any corroboration of the name (provincial) given for it in the 'Birds of Norfolk' on Mr. Girdlestone's authority (vol. ii. p. 394, note) I do not know. One occasionally sees black-faced specimens of this crake; as an instance of which may be mentioned the picture in Hunt's 'British Birds,' which only wants the black carrying down the fore-neck to convert it into a Carolina crake, a species which has occurred at Newbury, and of which I have a specimen said to have been killed in the South of France.—G. Mr. T. E. Gunn received two for preservation on the 18th.

Peewit.—On Good Friday two "nests" of three eggs and one of two were found at Hempstead.—G.

Wheatear.—First seen on the 28th, on the lighthouse hills.—G.

Robin.—On the 4th I watched a robin building in the public road. Having her nest examined probably made her desert; at any rate she left it three weeks. On the 24th, to my surprise, I saw her on, and the next day there were eggs.—G.

Thrush.—The thrushes' eggs found on the 28th of February were hatched on the 15th. On the 19th there were only two in the nest, so I suppose the other two eggs were bad, and had been removed by the old bird, who sat very high, even with that small family. The 'Norfolk Chronicle' of March 30th, says: "A nest containing young thrushes, full feathered, was found last week in a hedge between Brome and Eye."—G.

Cromer Lighthouse.—On the 1st twenty-eight starlings and

larks flew against the lighthouse; wind S.S.E., misty and rainy. On the 3rd a thrush and a starling; S.S.W., overcast and misty. On the 12th twenty-eight starlings. On the 13th one robin; blue sky. On the 30th nine starlings and a fieldfare; overcast, misty and rainy. On the 31st one starling.—*G.*

Pied Wagtail.—March 18. Pied wagtails have now become very plentiful, where a month ago there were none. The first I saw was on the 26th of February, already in summer plumage. At the same sheep-fold I to-day saw several pairs, mingled with chaffinches. They are the most fearless of birds, and the females at this season are not unfrequently mistaken for white wagtails.—*G.*

Hooded Crow.—The annual migration of hooded crows set in about the 8th, reaching its maximum on the 13th. All that day I saw their straggling flocks, at a great height, going eastward. My attention was first drawn to them by looking up into the clear blue sky, against which they stood out in relief. The keeper says that punctually as every March comes round he sees them, and always going east (rarely veering to the north-east), as if they meant to make the sea at Yarmouth. Last year he observed the first leave on the 5th, and they continued to go (mixed with rooks) at intervals until the 25th, the greatest number being observed on the 13th, which was the same date as this year, and a small flock was seen by him as late as the 23rd of April.—*G.*

Chiffchaff.—The first was heard on the 13th by the keeper. I had better here remark that my notes will always refer to North-repps, near Cromer, unless the contrary is stated.—*G.*

Redwing.—Not one has been seen for weeks.—*G.*

Peregrine Falcon.—The 'Eastern Weekly Express' says that a male was shot at Diss.—*G.*

Wild-fowl.—As usual, at this period of the year, the Norwich Market has illustrated the necessity of a "close time" for waders and wild-fowl,—snipes, wild ducks, teal and lapwings hanging for sale throughout this month. Snipes, from the mildness of the season, had paired very early, and probably more than usual would have remained to breed in our marshes if not disturbed. A wild duck was sitting in the first week in March, but many were shot long after that date. Every true sportsman will wish well to the "Wild-fowl" bill now before Parliament.

Ornithological Notes made in the neighbourhood of Plymouth during March, 1872. By JOHN GATCOMBE, Esq.

Hérons and Wagtails.—March 3. Observed some old herons in Weston Mills Lake, apparently in full breeding plumage, and several pied wagtails in perfect summer dress, with throats and backs of a fine jet black; also a few others which should be the true *Motacilla alba*, with throats of a fine black, but backs of a pure light gray. Mr. Bolitho, a bird-preserver of Plymouth, who dissected several wagtails with black backs some years ago, on purpose to ascertain their sex, said that he found some of them females, and quite as dark as the males; the only difference between them was that the females were the shorter birds.

Kestrel, Water Ouzel, &c.—March 6th. Went to Trowlsworthy Rabbit-warren and “Tor” on Dartmoor, and observed the following birds:—near the Dewerstone Rock some kestrels poised high in the air, apparently motionless, although the wind was blowing almost a gale from the east; many water ouzels and gray wagtails on the rocks and stones in the river Cad; several great, cole, blue and longtailed tits in the woods and brakes; a few blackheaded buntings on the marshy parts of the moor, and in Trowlsworthy Warren a fine male wheatear in perfect breeding plumage: this is about the earliest date on which I have ever recorded the appearance of this species in the neighbourhood of Plymouth. I also saw a flock of fieldfares flying across the moor.

Gulls, Razorbills and Rooks.—March 8. Wind west, blowing rather hard. Many great blackbacked, herring and common gulls in the harbour, but the kittiwakes seem to have left us, and I have not seen any razorbills since the end of February; but a friend told me that a week or two ago he counted over fifty razorbills which had been washed on shore in a very small bay on the coast of Cornwall. Another friend also told me that on two occasions, when visiting the neighbourhood of Sennen Cove, Cornwall, he had observed a large quantity of rooks washed up on the beach; and on asking some sailors if they could account for the cause of this, they told him that they supposed the birds got blown off the land sometimes in very heavy weather, and not being able to return were drowned,—or in crossing the sea from one place to another were caught in thick weather and lost. Now this certainly

looks as if some rooks really did migrate, and Mr. Gould, in his 'Birds of Great Britain,' alludes to the enormous flocks of these birds which in winter assemble in the large woods of Cornwall, where their numbers seem so far to exceed any probable quantity reared in the district, that he likens their numbers at roosting-time to the masses of starlings on the Norfolk Broads.

Blackbird.—March 10. Very hard frost; notwithstanding which a blackbird began to sing beautifully in our garden at daybreak, and early one morning I observed the same bird perched on the chimney-top of a high house in the street, singing melodiously. A rather unusual perch for a blackbird.

Cormorant, &c.—March 13. Took a walk into the country; found linnets numerous in flocks, but no starlings where I had seen so many a week before. Titmice plentiful. I also saw three bullfinches on an apple-tree in a small garden. Greenfinches too were plentiful. Heard the alarm note of a pair of missel thrushes and a blackbird, the noise made by the latter amounting almost to a shriek or scream, when suddenly a sparrowhawk dashed over the hedge, and gliding swiftly along by its side was out of sight "in a twinkling." Observed a flight of more than thirty ring doves: these birds are becoming more numerous in our neighbourhood. Came across a pair of wood larks, which were very tame: when on the ground this species has a more creeping movement than the sky lark. It is rather local with us, but a few might always be in favourite haunts throughout the year: during severe snow-storms in winter, however, great numbers appear on our sea-coasts in small parties or pairs, from the east, together with fieldfares, redwings and sky larks, which are constantly passing to the westward in flocks from morning till night, and at such times I have known wood larks so tame as to actually alight in the streets. To-day, with a powerful telescope, I watched a cormorant which was perched on the top of a rather slender pole full fifteen feet high, stuck in a mudbank in the harbour, in which uneasy position it quietly remained for upwards of an hour, notwithstanding the diameter of the post was so small that it must have found great difficulty in grasping it with its large webbed feet. I also saw another at a birdstuffer's shop which had been killed a week before, well advanced towards full breeding plumage.

Black Redstart, *Raven*, &c.—March 15. Walked many miles along the coast to the river Yealm. Observed a black redstart on

the rocks at Mount Batten, and a raven at its usual breeding-place near Bovisand; a pair of these birds are also breeding at Mount Edgcumbe. Saw many herring gulls on the cliffs in perfect breeding plumage, and fifteen cormorants standing together on the "Shag" rock; many were also on the "Rennies" rocks in company with a heron. Jackdaws and rock larks very plentiful. Saw a few dead razorbills, which had apparently been washed on shore some weeks previously. A large shoal of porpoises made their appearance in the harbour on the 16th of March. They have been very plentiful on the coast lately.

Glaucous Gull.—March 17. Observed a fine immature glaucous gull in the harbour. Immature birds of this species, as well as the Iceland gull, never have the dark bar at the end of the tail-feathers which is observable in the young of every other British gull.

Buzzard, Magpie, Black Redstart, &c.—March 20. Went to the Rhame Head, on which were several wheatears, and sitting on a rock a fine common buzzard, which seemed from its extended crop to have been perfectly "gorged." I also observed some kestrels, and about twenty pairs of herring gulls feeding in a grass field: many of these were in light brown plumage. Under the cliffs by the sea-shore I saw a black redstart, which I suspect was about to take its departure for the summer. On the road by Mount Edgcumbe I met a young man with a gun, and carrying in his hand four magpies, which he said were very numerous and did a great deal of mischief among the game.

Golden Plover.—March 22. Wind N.N.E., with occasional snow-storms. Scarcely a bird to be seen, and all silent with the exception of the robin. Saw some golden plover in the Plymouth Market with black breasts.

Glaucous Gull, Wood Larks, &c.—March 25. Weather not so cold. Observed four wood larks, one of which was hovering round at a great height in the air and singing beautifully: also met with a pair of ciril buntings. The glaucous gull, I am sorry to say, was killed in the Sound this morning; I was in hopes of its evading the gull-shooters until the 1st of April, when it would have been safe. I examined the stomach of this bird, and found it to contain nothing but nearly digested fish-bones.

Lesser Blackbacked Gull.—March 30. There has been a strong gale blowing for the last few days from the south-east and south-west, and a great many lesser blackbacked gulls have made their

appearance, quite taking the place of the larger species, which have been so unusually plentiful during the winter.

Catching Ducks with Nets in Ireland.—A friend of mine, writing from Ireland, says that on a large lake near his house the fishermen set nets for ducks just as they would for fish, and succeed in catching a great quantity, and that one of the dealers in wild-fowl had as many as sixty in the house at one time this winter, caught in that way. The chief kinds captured are tufted ducks, goldeneyes and pochards.

Arrival of the Chiffchaff.—My friend the Rev. G. Robinson informs me that the chiffchaff was seen and heard by him on the 12th in the County Armagh, Ireland: and another friend, T. A. Briggs, Esq., heard and saw it in the neighbourhood of Plymouth on the 16th.

J. GATCOMBE.

8, Lower Durnford Street, Stonehouse, Devon,
April 3, 1872.

Notes on the Birds of New Zealand. By T. H. POTTS, Esq.
(Continued from Zool. S. S. 2859.)

The Crookbilled Plover (*Anarhynchus frontalis*, Quoy and Gaim.).—This wader was first made known to science under its present name by MM. Quoy and Gaimard, having been observed during the expedition of the *Astrolabe*, undertaken in the years 1826-29, by order of the King of France. It is also thus recorded in the 'List of the Birds of New Zealand and the adjacent Islands,' in Dieffenbach's work. Again, by G. R. Gray ('Ibis,' July, 1862), we find this bird mentioned under the name of *Charadrius frontalis*, with this very remarkable note:—"The bird is represented in the 'Voyage of the *Astrolabe*,' with a deformed bill; the bill is perfectly straight in most specimens." Where could the author have met with those specimens with perfectly straight bills? or rather, which of the waders or plovers passed for the *Anarhynchus*?—perhaps *C. bicinctus*.

I have lately had the pleasure of perusing a very interesting pamphlet, 'On Rare or Little-known Limicolæ,' by Mr. Hastings, F.L.S., &c., who appears to have taken great pains in gathering together all the information he could collect about this peculiar-looking bird, and also gives a careful description of a specimen, in

which he unquestionably makes the best of the slender materials at his disposal.

Still, as something like mystification might yet be thought to surround the history of this very interesting species of the large Grallatorial family, I have had much pleasure in presenting to the Museum specimens of the adult, and also the young bird in the state in which it may be found probably some ten days from the date on which it emerged from the shell.

These specimens were obtained on the shingly bed of the Rakaia, which is one of the largest of the *snow* rivers that intersect the Plains of Canterbury. The *Anarhynchus*, be it understood, is not confined to that locality; in fact it is of frequent occurrence, and may be observed during several months of the year at least, near the streams or back-water of almost any of the rivers, which in their course disclose sandy spits and wide areas of shingle.

With regard to its breeding habits, I am unable to add much to the information which is given in my notes 'On the Birds of New Zealand' (Trans. N. Z. Inst., Vol. ii.). The young, if undisturbed, remain for some time near the spot where they were hatched; to escape observation they lie concealed behind stones, &c.; should an attempt be made to molest them, they start off with considerable celerity, uttering, at the same time, a shrill piping cry of alarm. When hard pressed they take to the water; we have known them to cross a stream of considerable volume. The parent birds never appear to separate far from each other during the period of incubation; on being disturbed they exhibit a peculiar habit of partially extending the wings, the effect of which is that they assume a broad and flattened appearance across the back, the head at the time being carried very low, the bill just clearing the ground, whilst a low purring sound is emitted. So tame does the *Anarhynchus* become under the influence of parental instinct, that after eggs have been picked up, examined, and replaced on their unsheltered sandy bed, I have seen the old bird immediately resume her duty of incubation, although I may have removed but a few paces distant and remained in sight for some time.

Having thus glanced at the favourite habitat, &c., of the crook-billed plover, I will now proceed to describe these specimens. The first, that of an adult male, probably in its second year: bill black, longer than the head, pointed, curved to the right or off side, curled slightly in itself in a leaf-like manner, a long groove on each

side of the upper mandible, the nostrils long, pierced not far from the base of the bill, fitted with a membranous process, which, apparently furnished with a system of nerves, extends some distance along the mandible; interior of both upper and lower mandible concave or sulcate, which form is maintained to the point; thus, the inside of the bill, when the mandibles are closed, becomes a curved pipe, with a very slight twist; the sharp edges of each mandible are horny and semi-transparent; from the base of the bill the upper mandible is flattened on the top for a distance of about six lines; it then assumes a raised and slightly rounded form, till it gradually sweeps down into the point; forehead, chin and the whole of the under parts white, with a broad irregular band of blackish feathers stretching across the breast, widest on the left or near side; above the bill, from eye to eye, runs a narrow slip of very pale brownish colour; crown of the head and upper surface of the body ash-gray; wings long and pointed; primaries dark brown, outer narrow vein of each primary darkest; shaft of feathers distinctly white; first feather longest; tail moderate, ash-gray, middle feathers inclined to brown; legs gartered, or naked just above the tarsal joint; legs and feet a peculiar tint of black-green, with a green shade; toes three to the front and none behind, united at the base by a membrane extending to the first joint, bottom of toes greenish brown, middle toe and nail longest, nails short and black. Bill measures 1 inch 2 lines; wing 4 inches 9 lines; tarsus 1 inch 2 lines; middle toe with nail 11 lines; total length 8 inches $5\frac{1}{2}$ lines.

The chick of the above-mentioned is covered with freckled gray down; undersurface silky white; wings pale brownish; the deflection of the bill easily distinguishable. Bill measures 6 lines; tarsus 10 lines; middle toe with nail 8 lines; total length 2 inches 8 lines.

Birds of the year do not assume the black band: females differ little from the males in size; the band is not so conspicuous, as it is much narrower than in the male: fine old males have the breast-band broad, and that on the forehead dark brown. I have never seen this bird assemble in large flocks like *C. bicinctus*.

The peculiar formation of the bill has apparently induced naturalists to exhibit considerable doubt as to the proper position of this, perhaps, unique species. Without referring to all the notices of this bird which have appeared at different times, it may be mentioned that at least one eminent ornithologist considered

the bill to be an accidental deformity ; again, it has in some way been confused with *C. bicinctus*, from which it differs materially, in habits as well as structure.

A consideration of the natural features of its favourite haunts permits us to indulge in surmises as to the convenience and adaptability of its remarkable form of beak for obtaining its food. Where we have seen it has never been far from water, and if, as we presume, this bird is peculiar to this country, we can point to our larger river beds as affording it admirable feeding grounds. These rapid shallow streams are perpetually wandering and shifting in their course, cutting new channels after each freshet, whether occasioned by heavy rain-falls or by the melting of snow from the alpine crests of the "back country." Anyone acquainted with our "plains" must have observed, here and there, how certain parts (termed by geologists "fans") are thickly covered with stones—as, for instance, some miles below the gorges of the Rakaia or Rangitata; however unpromising or useless they may appear to the inexperienced, the practical grazier is aware that those stones assist in keeping the ground cool, and in retaining beneath them a certain amount of moisture which, during the drier portion of the year (when the parching north-west winds prevail), thus invigorates the thirsty rootlets of many valuable grasses, and the result is the maintenance of a fair number of sheep on this rather barren-looking stretch of country. When any of these stones are disturbed from their bed, who can have failed to notice the commotion produced amongst the insect community thus suddenly disclosed to view; what scuttling ensues to gain fresh concealment from the garish light of day. In a somewhat similar manner, after a stream has deserted its temporary bed, in all probability numerous forms of aquatic insect life, attracted by the moisture, are to be found in the sand in which the shingle lies half imbedded. The horny point of the bill of this bird, from its peculiar form, is sufficiently strong to be used for thrusting between and under stones and pebbles.

The flexibility of the upper mandible derived from the long grooves and flattened form (extending to nearly half its length), tends materially to assist the bird in fitting its curved bill close to a stone, and thus aids it in searching or fossicking around or beneath the shingle for its food, while at the same time the closed mandibles would form a tube through which water and insects could be drawn up, as water is sucked up by a syringe. As the

flexure of the bill is lateral, the bird is enabled to follow up retreating insects, by making the circuit of a water-worn stone with far greater ease than if it had been furnished with the straight beak of the plover, or the long flexible scoop of the avocet.

The inspection of these specimens must clear away any little cloud of doubt that might remain on the minds of persons unfamiliar with the bird, and convince them that this singular form of bill, so far from being an accidental deformity, is a beautiful provision of Nature, which confers on a plover-like bird the advantage of being able to secure a share of its food from sources whence it would be otherwise unattainable.

October 14.—Since the above paper was written, an opportunity has been sought of visiting a favourite habitat of the *Anarhynchus*, as an examination of the head of the bird was desirable.

The mandibles are connected by a membrane, fringed with a tough black border, forming itself, when the beak is closed, into a slightly projecting fold at the gape; the upper mandible (or roof of the mouth) is armed with a treble row of very fine spines, set like the teeth of a saw, pointing to the base of the mandible; the tongue, when at rest, lies well within the lower mandible,—it is partly sulcate in form, tapers to a very fine point, is much shorter than the beak, leaving a vacant space of six lines from its extremity to the end of the lower mandible; the base is furnished on either side with a few spines (three or four), planted in the same direction as those in the roof of the upper mandible; the thick portion of the tongue is indented with four or five very slight longitudinal furrows, terminating in the channel into which the tongue now resolves itself till it ends at the very acute point; this sulcate form is attained by the edges being raised.

From this peculiar form of tongue, it may be observed that no hindrance is presented by that organ to the sucking up of water; the spines would prevent the escape of the most slippery or minute prey, which could be crushed by the closing of the beak and the pressure of the tongue against the upper mandible, the water finding ready egress.

The tongue of *C. bicinctus* is altogether different in form.

(To be continued).

Arrival of a Sumatran Rhinoceros in the Zoological Gardens.

By EDWARD NEWMAN.

THE arrival of a third species of rhinoceros at the Gardens of the Zoological Society is an event of no small interest. The Society already possessed three specimens of rhinoceros: one, the smallest, is the *Rhinoceros bicornis* of Linnæus, a native of Africa; and the other two are the large Indian species, *Rhinoceros unicornis* of Linnæus.

A very interesting question has arisen, whether this last, a huge and powerful animal, is not the Unicorn of Scripture, Monoceros of the Greeks, and the Unicornis of the Latins: the suggestion is very reasonable, and well worthy of investigation. Stupendous strength is the constant attribute of the Unicorn as it is of the rhinoceros. We read, in the Book of Numbers xxiii. 22, that by way of exalting the power of the Almighty, it is written, "God brought them out of Egypt; He hath as it were the strength of an Unicorn." I think it is evident that the Unicorn was the most powerful animal known, or this comparison would have no signification. A very beautiful passage in the Book of Job (xxxix. 9—12) shows that the Unicorn was not only an undomesticated animal, but an animal that could not be domesticated; and the contrast with domestic cattle gives its force and beauty to the passage.

"9. Will the Unicorn be willing to serve thee, or abide by thy crib.

"10. Canst thou bind the Unicorn with his band in the furrow? or will he harrow the valleys after thee?

"11. Wilt thou trust him, because his strength is great? or wilt thou leave thy labour to him?

"12. Wilt thou believe him, that he will bring home thy seed, and gather it into thy barn?"

Notwithstanding this passage, commentators have frequently insisted on the identity of the Unicorn with the bullock or some species of *Bos*, using as an argument that *horns* in the plural are sometimes mentioned; but the animal now for the first time brought into England has two horns, and this animal is undoubtedly Asiatic, though distant from Palestine, and we may continually observe that distance magnifies an object to the mind's eye just as a fog magnifies it to the natural eye. And though there are passages that

support this idea of a two-horned Unicorn, yet there are others which point very decidedly to his characteristic of being one-horned; for instance, in Psalm xcii. 10, "My horn shalt thou exalt like the *horn of the Unicorn*:" the words "*horn of the*" are added by the translator. It is worthy of remark that in instances where *horns* is used in the plural so also is *Unicorns*: for instance, in Deut. xxxiii. 17, "his horns *are like* the horns of Unicorns;" Ps. xxii. 21, "for thou hast heard me from the horns of Unicorns." No naturalist, who found in the narrative of a voyage that the captain brought home the *horns of narwhals*, would conclude that each narwhal had more than one horn: there is no other mode of so simply expressing the meaning as by making both words plural. It is not improbable that many of my readers will consider all this out of place: if so they will please "skip it" and pass on.

The Sumatran rhinoceros (*Rhinoceros sumatranus*) is much less than the Indian species, *Rhinoceros unicornis*, two magnificent specimens of which are already in our collection, both unfortunately mutilated by the loss of their horn: the first loss, that of the male, was an instance of self-mutilation, for he absolutely forced the horn off of his own accord by employing it as a lever, apparently with the view of removing one of the bars of his enclosure: before this event the horn was observed to be loosened, and it is possible that might have caused some irritation. A similar accident is recorded in the 'Zoologist' (S. S. 1915) as having happened to a female rhinoceros at Moscow: the horn is still preserved in the museum in that city, and the animal has developed a new horn on the site of the old one—a remarkable and interesting fact: the singular position or inclination of the horn of the female in the Zoological Gardens was recorded on the same page: this horn has now been removed, as will be seen by the record immediately following this memoir.

The Sumatran species, as its name implies, was first discovered in Sumatra, but it also inhabits Burmah, and indeed a great part of continental India, and I believe the island of Java: it differs from *R. unicornis* in having two horns, one of which, the smallest, seems exactly intermediate between the eyes, and the other, the larger one, occupies the same site on the nose as the single horn of *Unicornis*. Both the horns in the individual now before me have the appearance of having been sawn off, an appearance admirably represented in the masterly figure of the animal published at p. 233

of the 'Field' newspaper, a faithful representation of nature which does the artist infinite credit. In this and many other figures by the same artist, there is a total absence of that sensational exaggeration which often converts a portrait into a caricature. The skin is without those enormous folds which are so imposing in *R. unicornis*: it has only one fold, and that is immediately behind the shoulder and extends round the barrel of the animal; there are half-folds or large wrinkles between the ears, on the under side of the neck, and at the base of the fore legs: it is also without any indication of those dermal excrescences or tubercles which on the Unicorn species a good deal resemble flattened warts; the skin, moreover, appears flexible, and is covered with coarse hair, which is of a rufous-brown colour as far as the fold, and thence gray to the tail: this coarse hair occurs also on the upper anterior portion of the fore legs, and more sparingly on the belly. There is a fringe of long pendant hair on the margin of the ears, and also a good deal of long wiry hair on the tail. I purposely omit all reference to the absence or presence of incisor teeth, having no knowledge of the teeth except from books.

For a most interesting account of the capture, purchase and transport of this valuable animal, I am indebted to the columns of the 'Field,' to which paper it was contributed by my friend Mr. Tegetmeier. It is here reprinted.

"About five years ago a Calcutta paper announced the capture of a young female two-horned rhinoceros, which was taken near Chittagong, after having exhausted itself in its efforts to escape from a quicksand. In this condition it was secured by the united efforts of some 200 men, and, being bound with ropes, was secured to a tree. On the arrival of the news at Chittagong, Capt. Hood and Mr. Wickes started with eight elephants to secure the prize, which was found to be the two-horned Sumatran species described by Sir Stamford Raffles. After being bound with ropes between the elephants, she was marched into Chittagong, having to be conveyed across two considerable rivers, through one of which she was towed by the elephants, and the second she passed in the ordinary cattle ferry-boat. So great was the attention she excited, that the train of followers sometimes reached a mile in length. Arrived at Chittagong, she was placed in charge of an attendant, and by feeding with chuppatees and plantain-leaves she became somewhat tamer. When first captured she was about six feet in length from

the forehead to the root of the tail, and upwards of four feet in height. The horns were small, not more than three inches in length, the upper being in front of the eyes.

“The existence of the species became known to Mr. William Jamrach, a well-known natural-history collector, then located at Calcutta, who made three journeys to Chittagong to arrange for her purchase and transport. The animal was confined by ropes and chains some miles from Chittagong, and, from her size and want of docility, the transport was attended with great difficulty. Fortunately she had become attached to her feeder, and followed him by night as he carried a lantern and proceeded singing through extemporised roads to Chittagong, the passage through the villages being forbidden by the authorities. There she was embarked with great difficulty in a small vessel, being chained down on the deck, and conveyed to Calcutta. On her arrival she was so exhausted by her efforts to escape that she lay down after being landed, and had to be dragged by main force into the bazaar.

“The transport to England was a matter of the greatest difficulty. The strength of the animal is so enormous that it would have been impossible to confine her in an ordinary stall, such as would have served for a horse or ox, or even for a docile elephant. Mr. Jamrach therefore had a cage built of teak, in the strongest possible manner. The dimensions of this cage were twelve feet by nine feet, by eight feet high. As it now stands empty in the Zoological Gardens, it looks as if it would serve for a very fair-sized country cottage. In this the animal safely reached England, in company with five small elephants, a couple of tigers, and a number of smaller animals of various kinds. On arrival at the Gardens, it was found that there was no gate sufficiently wide to admit the cage, and a portion of the inclosure had to be taken down to permit of the entrance of the huge and intractable beast, which, tied by large ropes, was, not without some considerable risk to all concerned, conducted to the inclosure where she will in all probability spend the remainder of her life.”

Two other species of *Rhinoceros* are said to exist; one in Africa, the white or flat-nosed rhinoceros, a two-horned species, which has been called *Rhinoceros simus*; the other Asiatic, a one-horned species, much less than *Unicornis*, and called *Rhinoceros sondaicus*. I doubt whether either of these has been seen alive in Europe.

EDWARD NEWMAN.

The female Rhinoceros : successful Removal of her Horn.—Some time back I published a brief notice of a peculiar infirmity of the female Indian rhinoceros at the Zoo (Zool. S. S. 2341), namely, that her horn was loose and toppled forward, so as to come into contact with her nose: this irritated the part against which it rested, eventually causing a sore, which seemed to render the beast wretched and ill-tempered. A consultation among the authorities took place, and it was decided that amputation of the horn was the only remedy; and Mr. Bartlett undertook and has accomplished the difficult task. The idea of entering the den was not to be entertained for a moment: it would be impossible for an operator, however skilful, however daring, to do this with safety. Mr. Bartlett saw at once that the feat must be effected from the outside, and that the strategy of a Moltke would be required for its accomplishment: he has proved himself equal to the occasion. A long and diligent study of the characters of animals in confinement had convinced him that kindness would do a great deal, and also that a kind of mesmeric conquest can be gained over them by friction; a parrot always enjoys having her poll rubbed, and a pig can be prostrated by scratching his back with the end of a stick. Mr. Bartlett determined on his course of action, and no sooner was this resolved on than he entered on his campaign: first he fed the creature every day with cakes and buns; then, inducing her to come to the bars while engaged in the discussion of these dainties, he rubbed her face continuously with his hands: from the first her eyes were shut during the rubbing process, and she exhibited every symptom of intense enjoyment. The next step was to accustom her to the action *à* saw, and for this purpose, while still in a state of coma, a rough stick was introduced and was rubbed backwards and forwards on the horn with a sawing motion; this also was taken in good part; the huge creature seemed highly to appreciate the additional attention. The enemy was thus virtually conquered; as there is no apparent sensation in the horn, there was no apprehended danger of causing pain. So a time for the operation was agreed on, a well-set saw was procured, and everything prepared. In the morning Mr. Bartlett renewed his blandishments; the creature came with the utmost docility to receive them, and the surgical operation was commenced and continued until the horn was cut three parts through, when she discovered that something unusual was going on. Then she grunted loudly to show her displeasure, and the saw was instantly withdrawn: being under no restraint she rushed from the front of the den and ran round and round, emitting a series of angry snorting grunts. It is presumed that the almost total severance of the horn caused it to press against the sore on the nose, and hence the exhibition of temper on the part of her ladyship. The operator was now completely nonplussed, and discontinued his labour, postponing his task *sine die*, when by good fortune the creature by her restlessness managed, somehow or other, I will not say exactly how, to break

through the unsawn portion of the horn, which fell to the ground, a weight of eight pounds and a half. The state of the under surface of the horn showed how necessary the operation had become; the sore on the nose was found to be a serious affair, but is now rapidly healing, and the thanks of all naturalists are due to Mr. Bartlett for having so skilfully accomplished a most difficult and dangerous task.—*Edward Newman.*

Spring Arrivals in Guernsey.—On the 9th of April I heard a cuckoo; one had been seen the day before in the same place, and there was a report of their having been seen some days before. I did not hear it till the 13th, when I heard it several times on the cliffs. Here it is supposed that the cuckoo does not begin to sing till about twelve days after the “mackerel bird” has arrived: this bird, which I heard on the 5th of April, is known under many names here, as “cuckoo’s mate,” “cuckoo pilot,” &c., but under the name of wryneck it is not known at all. On the 23rd of March I saw two wheatears: is not this rather early for them? On the 13th of April two ruffs were brought to me by Mr. Cook: I do not know what day they were shot, but it must have been but a short time before, as they do not keep long in this weather, and they were still fresh. They were apparently young birds, in change of plumage: neither had the ruff. One had yellow legs, the other greenish. I think one is a reeve.—*C. B. Carey; Candie, Guernsey.*

Spring Arrivals in Nottinghamshire.—Chiffchaff and willow wren, at Ramsdale, March 29. Wheatear, at Ramsdale, March 30. Sand martin, at Wilford, April 2. House swallow, at Ramsdale, April 3. Yellow wagtail, at Ramsdale, April 10.—*J. Whitaker, jun.; Ramsdale House, Notts.*

Spring Arrivals at Bury.—I heard the note of the wryneck at Elmswell, about two miles from here, on the morning of the 1st instant. The note was repeated several times, so I have not the slightest doubt on the matter. This is the earliest arrival of this bird I ever knew here, where it rarely appears before the 8th or 10th.—*T. G. Tuck; Tostock House, Bury St. Edmunds, Suffolk, April 6, 1872.*

Arrival of Spring Migrants.—*Swallow.*—First seen on the 2nd of April, a fine day, thermometer 49° at 9 A. M. No more swallows observed until the 8th. In the ‘Times’ of March 13, the Rev. F. O. Morris announces the appearance of a swallow on the 8th of the month, and he remarks that swallows are recorded as having been seen every month in the year; but this is contrary to my experience, though I have been a close observer of their habits and migration for some thirty years, and no one could have been better placed for carrying on these observations. A reference to the pages of the ‘Zoologist’ will, I think, show that the earliest arrivals, as well as the latest departures, have been recorded here, but I never saw a swallow

before the beginning of April, or later than the first week in December; consequently during three months in the year none have been observed. That the starling is sometimes, not to say frequently, mistaken for the swallow, I am fully convinced, though closet-naturalists may smile at it, or be shocked at the idea, and refer me to some well-known popular work showing the disparity in size and dissimilarity in shape; nevertheless, I must adhere to my recorded opinion, strengthened and confirmed of late years by more than one writer and observer; and it will be found on referring to Morris's 'History of British Birds,' that he too has mistaken them; for instance, at p. 96 of vol. ii., he remarks:—"Near Sittingbourne, Kent, I noticed, in the course of a walk, a white bird on the wing, which I at first took to be a starling, but which proved to be a young swallow." That a closet-naturalist (even a Buffon or a Yarrell), with the stuffed specimens before him, would pronounce them most unlike, there can be no doubt; not so the experienced and observing field-naturalist who sees the starling in rapid flight on a cloudy and windy day.

Nightingale.—I am informed by a gardener, well acquainted with the nightingale, that one was heard at St. Lawrence on the 8th of March: the weather unseasonably warm, thermometer up to 53° at 9 A.M. No more nightingales were heard till the 9th of April.

Chiffchaff.—Not observed till the 31st of March, when one was seen at Bonchurch, flitting about the trees skirting the little lake,—a favourite resort on their arrival.

Willow Wren.—First seen on the 13th of April.

Whitethroat.—April 13. A whitethroat seen in the garden.

Starling.—Heard of a young starling being seen towards the end of March.

Rook.—When rooks commence building it is at all times difficult to judge, as they may be seen about their nests in mid-winter, if the weather be mild, as was the case this season; however, they now (15th of April) have young, well nigh full grown, that may be seen perched on the sides of the nests, and clamorous to be fed.

Wheatear.—I am informed that the wheatear was observed towards the end of March.—*Henry Hadfield; Ventnor, Isle of Wight, April 16, 1872.*

Arrival of the Blackcap.—I heard the full song of the blackcap on the 8th instant, and again this morning.—*Edward Hearle Rodd; Penzance, April 12, 1872.*

Early Arrival of the Chiffchaff.—In the 'Zoologist' for this month I observe several notices of the first appearance this spring of the chiffchaff, and can supply an earlier date than any there recorded. I heard the chiffchaff in Girdleigh Park, South Devon, on the 9th of March, or about eleven days earlier than I remember to have heard it before.—*Murray A. Mathew; Bishop's Lydeard Vicarage, Taunton, April 4, 1872.*

Early Arrival of the Chiffchaff.—I see several notices in the April number of the 'Zoologist' of the early arrival of this bird. About here chiffchaffs have been particularly early; I saw one on the 9th of March, and ever since that time they have been unusually numerous. I have not met with them in previous years before the 20th of March.—*C. Smith; Taunton.*

Arrival of Swallows.—A large arrival of swallows was noticed yesterday afternoon at the Land's End, consisting of several troops of forty or fifty flying with considerable rapidity, and without, apparently, fatigue or exhaustion. Their direction was from the south-west, between the Scilly Isles and the Wolf Rock; time 5 P.M. Many were afterwards flushed from furzy ground, exhibiting a somewhat feeble flight.—*E. H. Rodd; Penzance, April 11, 1872.*

Great Gray Shrike in East Yorkshire.—An old female *Lanius excubitor*, in very fine plumage, was shot on one of our commons on the 26th of February last. Beetles seem to form a chief part of their food.—*F. Boyes; Beverley.*

Redshank recorded as Blackwinged Stilt.—Allow me to correct a note of mine which appeared in the 'Zoologist' (S. S. 2684). I then made a statement to the effect that a blackwinged stilt had been shot at Stanningfield, in Suffolk, in May, 1871, on the authority of a birdstuffer whom I considered quite competent to recognize the species; but to-day, having for the first time seen the bird and thoroughly examined it, I find it to be a spotted redshank, in nearly full breeding plumage, which, although by no means a common bird, especially so far inland (nearly thirty miles from the sea), is far less valuable than the blackwinged stilt. I am extremely sorry that the mistake should have occurred, but it shows the necessity of examining a supposed rare visitant, and not recording it on the authority of others.—*T. G. Tuck; March 26, 1872.*

Great Auk on Disco.—Mr. Dunning, in the interesting extract which he gives from Dr. Hayes' work (*Zool. S. S. 2946*), again brings up the question whether the great auk has ever been really obtained within the arctic circle. Prof. Newton, in his abstract of Wolley's researches in Iceland ('Ibis' for October, 1861) says:—"There is, I believe, but one reliable instance on record of the gare-fowl having occurred within the limits of the arctic circle. This is the example said to have been killed on Disco in 1821, and which, after changing hands several times, is now in the University Museum at Copenhagen"; and, in a note, he adds, "I have spoken of the above as a 'reliable instance' of an arctic great auk; but I am not sure that even this is free from doubt; for in a letter Professor Reinhardt tells me he has 'had some suspicion' whether the reported Disco specimen of 1821 has not been confounded with one asserted by the late lamented Governor Holböll to have been obtained at Fiskarneaes (*South Greenland*) in 1815." Another version (apparently) of Dr. Hayes' story is given by Mr. R. Brown in his

paper on the Mammals of Greenland (P. Z. S. 1868, p. 361), which I will copy, for the information of Mr. Dunning and any others who care to have the matter ventilated. "Eight years ago (1859), on one of the little islands just outside of the harbour,* in the winter time, a half-breed named Johannes Propert, shot a bird which he had never seen before, but which, from description, could be no other than the great auk. He and his companions ate it, and the dogs in his sledge got the refuse; so that only one feather could afterwards be found. I know the man well. He is rather an intelligent fellow, and was not likely to destroy a bird of such rarity that he had never seen it before, when he knew that it would command a price from the Governor.† Moreover, Johannes bears the reputation of telling wonderful tales now and then. He says that he saw two, but that one escaped among the rocks. Mr. Frederick Hansen, Governor of Godhavn, has offered a reward for it, and is very sanguine that he will yet obtain a specimen of the *geirfugl*." Whether we have here record of four great auks or two I do not know, but it appears clear from the dates that the one mentioned by Dr. Hayes is not the one recorded by Prof. Reinhardt.—*J. H. Gurney, jun.; February 22, 1872.*

Glaucous and Iceland Gulls in Mount's Bay.—These two white-winged gulls have occurred here during the last fortnight; the former a fine large bird, with a general dirty white plumage, with slight marble markings on the wing and tail, but without any blue colour. The Iceland gull, I understand, shows more immaturity, from a greater admixture of brown.—*Edward Hearle Rodd; April 8, 1872.*

Birds in Smithfield and Leadenhall Markets.—On the 2nd of this month I visited Smithfield and Leadenhall Markets, where I met with several good birds, which I think worth recording. At Smithfield I got two perfect adult male redbreasted mergansers, a very good spoonbill, a bittern, and an old male cormorant. In Leadenhall I found a very good white stork, about a score blacktailed godwits (a few of them in full summer dress, but the greater part in transition), some ruffs and reeves, some of the most splendid herons I ever saw, plenty of shovellers and garganeys, and an immense number of pintail, all of which, I believe, came from Holland. I was unsuccessful in finding either the gadwall, ferruginous duck, or smew, though I searched carefully. I saw one swan, which was an immature bird of the common tame species, and there were still capercaillie and black game in the markets. I found two splendid marsh harriers, which I very reluctantly left, as they were much too far gone for stuffing. Some of the golden plovers I saw were in almost perfect summer plumage: this it appears they assume very early in the spring, as some of those in the finest plumage had evidently been dead at least three weeks. I was very sorry to see so many

* At Godhavn, on Disco.—*J. H. G., jun.*

† The Copenhagen Museum had offered large rewards.—*J. H. G., jun.*

peewits, in some cases exposed for sale with their eggs. With the peewits' on one stall I saw some rooks' eggs. I made inquiries after Manx shearwaters, but I could not get any, and was informed that none had been sent in this spring. The only sea-fowl I saw were three old cormorants, two in Smithfield and one in Leadenhall. Woodcock, snipe, curlews, oystercatchers, redshanks, &c., could have been obtained in any numbers. In one shop I saw two Royston crows, which I suppose had been sent up from the coast. I did not see a single specimen of the knot, saunderling, curlew sandpiper, gray plover or bartailed godwit.—*T. G. Tuck; April 6, 1872.*

Ducks in Nottingham Market.—In looking over some wild ducks on one of the fish-stalls in Nottingham Market, the other day, I saw one of those rare birds, the ferruginous or white-eyed pochard, amongst the following:—goldeneye, pochard, wigeon, teal, wild duck, shoveller and tufted duck. On asking the man where they had come from, he informed me Leadenhall Market. The bird was too far gone to be preserved. It is a pity such a rare duck should have been lost.—*J. Whitaker, jun.*

Birds observed in Liverpool Market during March.—On the 2nd of March I purchased a swan in our market, which, if Yarrell is correct, seems to be a specimen of the Polish or changeless swan: its chief characteristic is the colour of its legs and feet, which are a light slate-gray; the knob on the base of the upper mandible is small, considering the bird is an old male: nevertheless, I much doubt whether it is not only a variety of our mute swan: the salesman informed me it came from Ireland. March 14.—Golden plovers are now assuming their summer dress, but gray plovers show scarcely any sign of the coming change. March 19.—Brent and bean geese are in the market in some numbers to-day, also a fine pair of goldeneyes.—*Henry Durnford; 1, Stanley Road, Waterloo, Liverpool, April 7, 1872.*

Erratum.—In my note of last month (Zool. S. S. 3018), in the seventh line from the top, *for* or bartailed godwit, *read* a bartailed godwit.—*H. D.*

Are Guernsey Birds British?—This seems to me to be rather a puzzling question, because in some respects the birds differ from the British; I mean not individually, but that birds are found here which are rare in Britain, and common birds in Britain are not always found here. This is rather important, because if it is decided that Guernsey birds are not British, those shot here cannot appear in British collections. It all depends whether the Channel Islands are within the imaginary boundary beyond which all birds that are shot are not considered British; then this imaginary line cannot extend equally round Britain, for Calais is nearer England than we are here, and so French birds would be British. I shall be glad of a solution to my difficulty.—*C. B. Carey.*

[I shall be glad to receive opinions from more competent ornithologists before I give my own.—*Edward Newman.*]

Proceedings of the Entomological Society.

March 18, 1872.—F. SMITH, Esq., Vice-President, in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—"Annales de la Société Entomologique de Belgique," tome xiv.; presented by the Society. 'Bullettino della Società Entomologica Italiana,' tome iii., trimestre 4; by the Society. 'The Canadian Entomologist,' vol. iv., No. 2; by the Editor. 'L'Abeille,' tome viii., livr. 13 and 14; by the Editor.

Election of a Member.

Raphael Meldola, Esq., of the 'Star' Chemical Works, Brentford, was balloted for and elected a member of the Society.

Exhibitions, &c.

Mr. Higgins exhibited a series of magnificent species of Cetoniidæ, from Java.

Mr. Bond exhibited a British specimen of *Acronycta leporina*, presenting a remarkable instance of dimorphism, the right hand wings being coloured and marked as in the variety known as *bradyporina* (which at one time was considered a distinct species), whereas those of the left hand were entirely typical of *leporina*. The body also partook of the two forms, being divided longitudinally into two tints.

Mr. Smith said that the discussion at the last meeting respecting Siberian insects had induced him to examine specimens of the common hornet (*Vespa Crabro*), from Europe, Siberia and North America, and he found that individuals from these districts presented no appreciable differences, and their specific identity was proved by the genital organs being alike in all cases, whereas those of the Asiatic *V. orientalis* differed considerably.

Mr. Albert Müller read the following notes:—

"A few words on Serropalpus striatus, Hellenius.

"At pp. 76—78 of the 'Entomologist's Annual' for 1872, my friend Mr. Rye makes some judicious remarks on the single doubtful British example of this beetle (suggesting that it may have been introduced in Norwegian pine-wood), and points out an error in Grenier's Catalogue, where it is ascribed to an unknown author named 'Hellwing.' I may be permitted to offer some notes on both topics. First, as regards this insect's liability of being transported in pine-wood. Some twelve or fifteen years ago I arduously collected Coleoptera at Basle, where it used to be part of my daily recreation to visit the landing-place of the pine timber floated down the

Rhine in rafts. The timber was generally dragged ashore and piled up along a low stone wall at the 'Untere Rheinweg.' Between the wall and the trunks sufficient space was left for a man to get along. I soon found out that the wall thus shaded from the glare of the sun formed a retreat for lots of 'good things' colcopterologically speaking. Hence I got into the habit of inspecting it closely and regularly. One hot afternoon in summer I caught sight of a dozing creature I had never seen before; it looked like one of the Elateridæ, and yet there was something uncanny about its facies, which did not tally with what I knew of that group. While thus speculating, I must involuntarily have breathed on the beetle, because suddenly it dropped to the ground and began to shuffle along very rapidly in a peculiar jerking and rolling fashion, reminding me vividly of the awkward but rapid motion of a Mordella. Then of course I pounced down upon it, and once safely in the spirit bottle its palpi and a look at the breast showed me that I had captured *Serropalpus striatus*, the only specimen I ever saw alive. Many years afterwards, on the 13th of July, 1869, my friend Mr. H. Knecht took another specimen, while crossing the Rhine on a ferry a few hundred yards above the spot where mine was captured. The path of that ferry is daily crossed by hundreds of pine-rafts. Thus we have here two instances of *Serropalpus* occurring, one at a distance of two feet from a pile of fir-timber, and both in the immediate vicinity of the route of numerous pine-rafts. I am not aware that other specimens have recently been taken at or near Basle; on the other hand I have to state that the same friend has informed me since, that in the summer of 1871, Mr. Erné took at Mulhouse, in Alsatia, about two hundred examples, but whether from growing firs, or dead, decorticated trees, I am not told. It should, however, be stated, that Mulhouse is one of the chief depôts of the timber trade, and draws its supplies through the canal branching off at Huningue, just below Basle. The insect, although usually fir-loving, is, however, not confined to resinous trees, as Abbate Guiseppe Stabile took it at Macugnaga in Switzerland, off alders (*Alnus*). Secondly, a word as to how the curious blunder 'Hellwing' may have originated in M. Grenier's 'Catalogue.' Of course to turn up an entomological author of the name 'Hellwing' would now be almost as interesting as finding some more *Serropalpi* in a bundle of hose at Leicester (*Ent. Annual*, 1872, p. 76), but we all know that there lived once a Pomeranian entomologist, I. Ch. L. Hellwig, who created the genus *Hallomenus*, used among others by Illiger and Panzer, and that this genus *Hallomenus*, of Hellwig, contains even now the next of kin of *Serropalpus striatus* of Hellenius. When, therefore, a French author meets in a German work with a genus *Hallomenus*, of Hellwig (usually abbreviated Hellw.), and next to it he has to place a genus *Serropalpus* of the Swede Hellenius (usually abbreviated Hellen.), surely some allowance may be made for the 'printer's devil.' It is, however, amusing to see that precisely the

same mistake can be pointed out in the catalogues of authors whose native language is German; and lest it should be thought that I want to make undue propaganda for either Teuton or Gaul, I abstain from mentioning either, but confine myself to the case of a neutral Swiss, the late J. J. Bremi, in whose 'Catalog der Schweiz. Coleopteren,' 1856, we find, at p. 38, *Serropalpus striatus*, Hellw., instead of *Hellen*.! Bremi, however, agreed with Mr. Rye in his view of the rights of priority of Schaller's name 'barbatus,' and sinks 'striatus,' *Hellw.* (*sic*!) as a synonym. Herein he is wisely followed by Dr. Stierlin, but of course the latter quotes correctly, 'striatus,' *Hellen*. (*Fauna Coleopterorum Helvetica*, 1867, p. 225). The late Dr. Schaum followed the opposite course in his 'Cat. Col. Europæ,' but his reasons I know not; can any German friend enlighten me?"

The Secretary read an extract from the 'South Australian Register' for January 2, 1872, forwarded by Mr. C. A. Wilson, respecting the recent ravages of locusts in that colony. The more important observations were as follows:—

"Some of the farmers in the North appear to have suffered very seriously from the swarms of locusts that have suddenly made their appearance there, and during the past three weeks the papers have been full of letters, paragraphs and articles upon the scourge, which have traversed the colony in force from the north, and attacked Adelaide in their march southward. As the subject is one of deep interest to every tiller of the soil, we collect the most important items of information and comment for the benefit of our readers. The 'Register,' referring to the subject on December 19, says:—'It will be remembered that in alluding to the locusts in a former issue we requested information as to their ravages. One correspondent has responded to that request, and the facts he furnishes, as published below, show that the duty of victualling for a week or two the hosts of locusts that have billeted themselves upon the city and suburbs is far from a trifling one. The only grain of comfort offered to relieve our minds comes in the shape of a communication from an old colonist, to the effect that the locusts are in the habit of depositing their eggs this month, and that they never long survive this domestic operation. The sooner they set about the preliminaries for their final exit the better. Subjoined is the communication to which reference is made above:—"I observed in the Register's leader this morning that any particulars of ravages done by the locusts would be gladly inserted. Perhaps the following may be worth noticing amongst others, and you may rely upon its correctness, for I write merely what has come under my observation:—Mr. H. Hughes cut two sections of hay (pure wheaten and intended for wheat) about six weeks ago, when quite green, and an excellent crop of green feed followed, which is termed 'second crop.' It was quite thick with young ears on it, and about one foot or one foot and a half

high. On Saturday it was standing fresh and green, and at three o'clock in the afternoon there was not a stalk left. Mr. Hughes intended turning his cows in to-day, and had been relying upon the ground providing grazing for some time. Having reserved a small portion of the second crop (which was too good to cut for hay) as seed wheat, he had been unable to turn the stock in before, and it had consequently grown without hindrance. The ground containing the second crop destroyed is about sixty or eighty acres. The locusts were about Burnside in immense numbers, and produced quite a humming or buzzing noise in the air as they passed. All seemed to be going S. or S.W. The neighbourhood is still full of them (those left behind), and they are eating every particle of feed down. I am not aware of their having done damage to gardens or standing wheat crops."

" 'Delta,' the well-known naturalist of South Australia, writes thus:— 'During the last few weeks these locusts have done more than their average amount of damage at this season of the year, but, judging from past experiences of their migratory habits and times of appearance, I do not think we have more than usual to fear from their depredations this season, except in limited localities. These creatures just now more particularly infesting Adelaide and neighbourhood are genuine locusts.

" 'In every year this kind of migratory locust has appeared at some part or other of the colony in a greater or less degree, though perhaps never to such an extent in our metropolis as during the time first mentioned,—the exact year I forget. They were then, and often since, of four distinct species, all flying and mingling together, but not easily distinguished, being nearly similar in size. That spoken of by your correspondent 'Observer'— "female dirty brown, males a bright yellow"—was and has always been by far the most numerous. In all the locust tribe, I believe without an exception, the male is smaller than the female.

" 'In every year that I have observed these migrating species at one or other part of the colony, they have in no case been seen in any numbers after the first of January. They seem to die off gradually as the new year approaches; their time is up, their strength exhausted, and perhaps the increasing heat of the weather and decrease of food aid in their destruction. At this time, also, the females finish their egg-laying. As to remedies against their numbers and destructive habits, these have been asked for naturally enough ever since their first appearance, but none can be offered as concerns the mass, nor reasons given why they come more one year than another, or in particular localities. In the earlier days I could suggest but two things, and these applied only to their very partial destruction, first stating that the gradual cultivation and opening up of the soil would tend as much as anything to decrease their numbers, as the eggs (of which each female lays a good many) are deposited about an inch under ground, thus preserving them from the effects of the weather, but not from the action of

the plough. Of the two remedies (though only to a small extent) above alluded to, the one was keeping a large body of fowls, to assist the insectivorous birds that were always seen in numbers about a homestead, especially at locust time; but in these days of destruction of the smaller birds for sport, or under the mistaken impression that they are all fruit or grain eaters, and are therefore indiscriminately shot down, we must not wonder that insects of many kinds, including injurious ones, will increase, and this I see you also mention. On one of these locust visitations—it might have been in 1858, mentioned in your last article—I observed immense swarms of a kind of bird, a little larger than an English sparrow, hovering like a thick cloud over several of the larger tracts of land where the unwelcome visitors were flying, and soon found that they fed principally, if not solely, on them. The name of the bird I did not learn, as it disappeared with the locusts, as if sent for their especial capture. The other partial remedy I mentioned at the time, and which had been previously told me by a friend, was the same as your correspondent ‘Observer’ speaks of, *viz.*, the leaves of the castor-oil plant, just for the purpose, as he says, of protecting flowers, &c., in a garden. In past years I have frequently tried this, and always found it succeed best when the leaves were fresh. The locusts in their flight descended on them, as on everything else of a vegetable nature, and died after the first few bites; more locusts took their places, so that each leaf was nearly covered with dead bodies, others lying all around who had only strength left to crawl a few paces off, so quickly did the poisonous effects of the sap of the leaf act.

“ ‘Our reference to locusts last week were confined to the Northern Districts, and they occasioned very little notice in Adelaide; but since that the townspeople have had ocular proof of the kind of plague that the Northern farmers suffered from. On Friday evening, December 15, an enormous swarm of locusts passed over the city, darkening the air, and creating no little sensation. It appears that for some time they had been steadily marching—if the kind of locomotion affected by them can be called “upon a march”—upon the metropolis. We have no positive proof of the fact, but it is more than probable that the army mentioned before as having reached Kapunda, and as being *en route* for Gawler, is identical with that to which we are now referring. It was seen approaching the city by Mr. Badge, who on Friday, whilst about three-quarters of a mile beyond Athelstone, encountered a swarm of locusts so thick that his horse refused to face it at a faster pace than a walk. The rider had to cover his head to save himself from injury by their striking him. They were making their way towards Adelaide, passing in solid phalanx towards the south-west. A few stragglers remained in the squares and streets, apparently too much fatigued to continue the advance, but the main body kept standing or covering a space extending over many hundred yards in length and many yards in breadth.

The citizens flocked out from their houses to witness the unusual sight, and examined with interest the solitary locusts that remained behind. They appeared to be of the ordinary type, but of large size and wonderfully strong in the wing. Another huge swarm of locusts visited the city on Sunday, December 17, alighting in various parts of the Park Lands and in private gardens, where in a very short time they left marks of their voracity upon vines, fruit trees, and other specimens of vegetation. A day or two afterwards Mr. Townsend, of Rundle Street, showed us a basket of apricots, or rather stones, to give an idea of the devastation the locusts had caused among some of the gardens at Glynde and in the Torrens Valley. He states that on many trees of American plums there is not a vestige of fruit left, the invading hordes having thoroughly bared the orchards. We have also seen a bunch of potato-tops and a sample of maize, taken from splendid growths in Mr. O. Philp's garden, Chain of Ponds. At ten or eleven o'clock on Monday there was not a solitary specimen of the pest about, but soon after countless myriads arrived, and descended upon a splendid patch of potatoes, varying their diet with other green things. It is rather remarkable, but it is vouched for, that the locusts do not touch thistles. Standing upright in the midst of farmsteads and along the river-bank, where clouds of the creatures have gorged themselves, may be seen splendid samples of the much-abused thistle flourishing while dreariness reigns around. All these are very much like the doings of the locusts of 1844; for we find in the old file already referred to the following paragraph:—
“During the last few days North Adelaide has been visited by swarms of destructive locusts. In the gardens at the back of Kermode Street they have made great havoc, clearing the vines of their leaves, and eating up the melons and everything else that is green. On Monday the whole neighbourhood was alive with them, their constant fluttering in the air not being unlike the flakes of a heavy snowstorm. Last year they did much damage in this particular locality, but this year their numbers are greatly increased.”
—‘*Register*,’ November 13, 1844.

“On Friday, December 17, about sundown, there was an immense flight of locusts at Glenelg from the seaward. They were in countless myriads, and flying about nine or ten feet high. They had every appearance of having crossed the Gulf; at least, they were in full force at the end of the jetty, and appeared to be making their way, against the wind, towards the hills. One of the Glenelg fishermen states that he has on previous occasions seen locusts crossing the Gulf, and that he has, while out at sea, found his boat covered with them. A few days afterwards (December 20) the locusts arrived in force at Glenelg, travelling rapidly southward. The right wing of the army rested on the coast line, but did not go further westward than the green herbage of the sandhills. On the bare sands only a few stragglers were to be seen, and scarcely any within three or four yards of the water.

Swarms alighted upon various patches of vegetation; one of couch-grass, we heard of, over which the locusts settled two deep, and were killed wholesale with whips. They attacked less zealously a small plantation of lucerne, the flavour of which seemed hardly to their taste. Near it a number of fowls collected, and seemed to be well employed in picking up specimens of Natural History. Mr. George H. Glover writes the following from Kersbrook on the 19th December:—‘The locusts were first seen in this neighbourhood on Friday last; they still increased in what we would now call small numbers, for at about eleven o’clock yesterday morning (Monday, the 18th) they began to come in clouds, or rather in one continual cloud. The work of destruction was then commenced in earnest. In a very short time acres and acres of potatoes were cleared of their leaves; the ground, grass, potatoes, and fruit-trees from the bottom to the tops are literally covered with them: they are so thick that we have enough to do to go through the gardens where there is anything green. The first things they eat most are potato-tops, and reeds and grass. Of course I shall be able to tell more about it in a few days. Their direction here is from north-west to south-east.’ Some anxiety has been shown as to the extent of the ravages in Dr. Schomburgk’s domain of the marauding armies of locusts; but it is gratifying to learn that, while verbenas and some dainty flowers have fared badly, the gardens as a whole have not suffered much. The bulk of the leafage of shrubs and ornamental trees would probably have been cleared but for the pasture-land which adjoins the pleasure-ground, and the plots of couch and other grasses that have been so tastefully laid out. On these spots the hordes settled in myriads, and in many places nothing remains but the bare brown earth and a few tussocks where there was formerly a fine bright green sward, soft as velvet and refreshing to the eye. The pests swept over the grass and ate it far closer than sheep would have done. The Director is yet thankful that this satisfied them, and the locusts in consequence spared what was of vastly more value. Well watering the plots will restore the artificial grasses, and ere long a fresh crop will spring.

“Other colonies as well as our own have been suffering from a similar visitation. From Echuca we hear that incalculable mischief has been done to the standing crops in the district; but the local paper adds:—‘It may be useful to agriculturists to learn that the larkspur is exceedingly fatal to these insects. They may be seen lying dead in heaps in gardens where this plant is cultivated.’

“Mr. M. Symonds Clark, in a letter to the ‘Register,’ writes:—‘Of birds which destroy locusts we have a great many species. A very old colonist has informed me that quail were formerly very abundant upon the Adelaide Plains, and that on examining the crops of some of these birds which he had shot he found them to be full of grasshoppers. Probably hawks of all kinds, crows, native magpies, shrikes, laughing jackasses,

kingfishers, plover, landrail, swans, geese, and nearly all game birds, together with many of the small birds, lend their aid in checking the increase of the locusts. How advisable is it, therefore, that the wanton destruction of these birds should be put a stop to.'"

Mr. Horne related some of his experiences concerning locusts in India, the species being probably *Acrydium peregrinum*. Their numbers were such that they could often be collected by tons, and they were fed upon by almost every description of animal, including cows, camels, goats, &c.; and they were also eaten, when cooked, by man; he had himself partaken of them. The castor-oil plant certainly had no injurious effect upon the Indian species, though they evidently suffered from the leaves of the tamarind-tree, which acted as a purgative to such a degree that the surface of the ground beneath one of these trees attacked by them had often more than an inch deep of their droppings accumulated upon it.—*R. M'L.*

New Names for European Butterflies.

By W. A. LEWIS, Esq., F.L.S.

THE following corrections of synonymy appear to be rendered necessary by Dr. Staudinger's 'Catalog der Lepidopteren' (1871), and Mr. W. F. Kirby's 'Catalogue of Diurnal Lepidoptera' (1871).

Genus LIMENITIS.

Staud. Cat. p. 15; Kirby, Cat. p. 236.

ANONYMA, *mihi*.

Camilla, W.-V. p. 182 (1776), sed *Camilla*, L. M. L. U. p. 304 (1764), erat *Lim. Sibylla*.

Camilla recentium auctorum.

Lucilla, Esp. 38, 2 (1778? post 1776), sed *Lucilla*, W.-V., alia erat sp.

Rivularis, Sc. Ent. Carn. 165 (1763), pro parte.

Genus NEPTIS.

Staud. Cat. p. 16; Kirby, Cat. pp. 239, 240.

INNOMINATA, *mihi*.

Sappho, Pall. Reis. (1771). Kirby, Cat. 1871, p. 239; sed *Sappho*, Pall. Reis. erat *Nept. Aceris auctorum*.

Camilla, Esper. 59, f. 1 (1780), sed *Camilla*, L. M. L. U. p. 304 (1764) alia erat sp.

Lucilla, S.-V. p. 173 (1776), n. Cat.

Lucilla, F. Mant. 55 (1787), et recentium auctorum, sed *Lucilla*, Esp. (1778), alia erat sp.

I propose to take an early opportunity of explaining these "reforms," and of commenting upon the others (to the number of several dozens) now imminent. There appears a good prospect that we shall very soon have a quite new and really serviceable nomenclature.

W. A. LEWIS.

Lepidoptera on the Lancashire and Cheshire Sand-hills.—Mr. Porritt, of Huddersfield, and I visited the Lancashire and Cheshire sand-hills in the second week after Easter. Some account of our doings at so early a season may be interesting. Fortunately we had the good luck to hit upon one of the few fine weeks we have had for a long time; with the exception of the first night, the weather was all that could be desired—bright and hot in the day time, and still and warm at night. We met at Southport Station at mid-day on Monday, the 8th of April, and having secured quarters went on the sand-hills to look for larvæ of *Orgyia fascelina* on the shallows; though not so plentiful as usual, during the afternoon and following morning we managed to secure nearly two hundred between us. On Monday night we sallied forth with lanterns, but the wind was high and the atmosphere cold, and a smart shower or two soon sent us back, after having lost our way among the sand-hills, and for a short time trudging away in the direction of Lytham, one of us maintaining that the lights of that town were the lights of Southport Pier. Not a moth was to be seen at the shallow-bloom, and a couple of larvæ of *Satyrus Semele* and two or three of *O. fascelina* were all we got for our walk. Next day we crossed the Mersey into Cheshire, and having secured the services of Mr. William Greasley, of Wallasey, a most intelligent and observant entomologist, we turned out in the dusk to look for *Tæniocampa Opima*, which we were told was out and in unusual abundance. We made for a certain valley, and had no sooner lighted our lamps than we were among them, and in the course of a couple of hours had boxed no less than sixty-five, all in good condition: some we took from the shallow-bloom, but many were at rest on the marram and dead stems of hound's-tongue, ragwort, &c. The greater part of these last were females in the act of oviposition. The night was just right, calm and warm. The following night we took twenty-six, and

on the last night fifteen—one hundred and six in all. We certainly were in luck: so great a take was never heard of before, and there is no doubt *Opima* is unusually plentiful this season. On the second night we only hunted a short time for *Opima*, and then went on to look for *Lichenea* larvæ on *Sedum acre*: we were also successful here, thanks to Mr. Greasley, from twenty to thirty being taken. On Wednesday morning we went on the sand-hills for the day-flyers and larvæ. *Eubolia lineolata* was out in excellent condition; also *Nyssia zonaria* on the marram—this we took both by day and night: it is a very sluggish insect, even the male seldom flies—only about nine o'clock in the morning, says Greasley. Larvæ of *Bombyx Quercus* and *Rubi* were scarce: we only found three of the latter, and they were all in the act of spinning up. We also found a few larvæ of *Leucania littoralis* by raking the sand. Nothing could exceed the beauty of the sallow-bloom in the slacks of the sand-hills: acres of it, one mass of gold—a “golden floor”—the perfume delicious; while the natterjack toads kept up a continual and somewhat monotonous croaking in the fresh-water ponds, and the larks, singing “at heaven’s gate,” and the bees’ murmur at the bloom, made delightful music to the ear: the green lizards ran along the hot sand with rapid movement; and altogether the scene was one not to be easily forgotten. It is worth anyone’s while to pay a visit to the sand-hills in bright weather when the sallows are in bloom. The atmosphere being so calm the tracks of the different animals were clearly visible on the driven sand: very curious is that of the natterjack, but still more curious is the track of larvæ, every ring being marked, as it were, in steps. Besides the insects above mentioned we took the hibernated larvæ of *Liparis Salicis* in abundance at one spot; *Teniocampa rubricosa* and *gracilis* and *Anticlea badiata* at the sallows at night; *Eupithecia pumilata* and *Selenia illunaria* at lamps. As may be supposed, we returned home well satisfied with our very pleasant “out,” and our “spolia opima.”—*Thomas W. Daltry; Newcastle, Staffordshire.*

Early Occurrence of *Ophion obscurus*.—Exclusive of Lepidoptera, the insects that most constantly resort to a light are *Bradycellus fulvus*, *Aphodius rufipes* and *Ophion luteus*; and it may be supposed that these three transact their business in the night, and rest during the day. The only living specimen that I have seen of *Acentropus niveus* came to me in like manner. *Ophion obscurus* was attracted by a candle on the 2nd of March, its early appearance corresponding with the unusual mildness of the season.—*Francis Walker; Elm Hall, Wanstead.*

Notices of New Books.

A History of the Birds of New Zealand. By WALTER LAWRY BULLER, F.L.S., &c.

HAVING so decidedly taken my stand on the “theory of creation,” in opposition to the “theory of evolution,” and having also expressed an opinion that the fauna and flora of Australasia—that old, old world—are dying out and fading away, it may be supposed that an undertaking like this of Mr. Buller’s would be peculiarly consonant with my taste. If the “theory of evolution” be true we shall have the species of Australasian birds multiplied almost infinitely: the gaps between *Dinornis* and *Apteryx*, between *Sceloglaux* and *Strigops*, will be filled by a multitude of intermediates: if the “theory of creation” and “death of species” be true, there can never be intermediates, but *Apteryx*, *Sceloglaux* and *Strigops* will follow *Dinornis* to the grave; the gaps will widen as the world increases in age; and our posterity will witness the decadence and final “death of species” year by year, and almost day by day. Nothing can resist the extinctive power of causes now in active operation; a mind may be so imbued with the views of Darwin as to be blind to the evidence of his eyesight, deaf to the logic of facts; but there is no proof that Mr. Buller is either: he is evidently friendly to Mr. Darwin’s celebrated hypothesis, but sees, hears and thinks for himself. It seems to me that in the labour of acquiring, arranging, and meditating on publishing a history of the birds of New Zealand, he must inevitably supply materials for the superstructure I desire to raise. In his very prospectus I find abundant evidence of this; let it speak for itself:

“It has been remarked by a celebrated naturalist that ‘New Zealand is the most interesting ornithological province in the world;’ and in a qualified sense this is no doubt true. The last remnant of a former continent, and, geologically considered, probably the oldest country on the face of our globe, it contains at the present day the only living representatives of an extinct race of wonderful Struthious birds.

“Within recent historic times this circumscribed area, scarcely equal in extent to that of Great Britain, was tenanted, to the entire exclusion of Mammalia, by countless numbers of gigantic brevipennate or wingless birds, of various genera and species, the largest attaining to a stature nearly twice that of a full-grown ostrich. These colossal ornithic types have

disappeared; but their diminutive representatives (the different species of Apteryx) still exist, in diminished numbers, in various parts of the country, and these are objects of the highest interest to the natural-historian. But apart from this view of the subject the avifauna of New Zealand presents many special features of considerable interest. A large proportion of the genera are peculiar to the country; while some of the forms are perfectly anomalous, being entirely without a parallel in any other part of the world.

"Under the changed physical conditions of the country, brought about by the operations of colonization, some of these remarkable forms have already become almost, if not quite, extinct, and others are fast expiring. It has been the author's desire to collect and place on record a complete life-history of these birds before their final extirpation shall have rendered such a task impossible; and it will be his aim to produce a book at once acceptable to scientific men in general and useful to his fellow-colonists."

Happily for Science the author for twelve years has held an official position in New Zealand, which has enabled him to visit every part of the country, while his frequent intercourse with the natives has greatly assisted him in acquiring the information required for making such a work complete. An "introductory treatise" on the ornithology of New Zealand is promised, and a general introduction will be issued with the concluding part.

A most important characteristic of Australasian zoology, dependent indeed on the evidence it affords of the truth of the theory of Creation, is that it has preserved those "links" in our systems which have been so long "missing;" one illustration of this is sufficient, and the kakapo affords that illustration: as a parrot with owl-like characters it shows the necessity of approximating (not associating) the parrots and the owls. I have always contended for this approximation, relying chiefly on the zygodactyle character of the owl's toes: but evident as this approach is on the part of the owls, there was still wanting an evidence of approach on the part of the parrots; the kakapo supplies that want. Again, the "countless numbers of gigantic brevipennate," or absolutely apterous birds, which once inhabited New Zealand, prove that our expressions "abnormal," "isolated," &c., as applied to the ostrich, emeu, or cassowary, are simply so many apt illustrations of our ignorance, for it is now certain that the large proportion of the avipopulation of Australasia was once apterous and ratite, and the only alternative left open for our consideration is whether the Dinornis is absolutely dead or has *migrated* and been evolved into something else.

These and other speculative questions, as well as details of structure, such for instance as the articulated superior jaw of the parrots, a phenomenon strangely "cropping out" in the hooper as lately discovered by Mr. Boyes (S. S. 2505), will no doubt be fully discussed and illustrated in the promised Introduction; but I will not anticipate.

The birds figured and described in the present volume are: Hieracidea Novæ-Zelandiæ, Circus Gouldi, Spiloglaux Novæ-Zelandiæ, Sceloglaux albifacies, Stringops habroptilus, Nestor meridionalis, Nestor notabilis, Platycercus Novæ-Zelandiæ, Platycercus auriceps and Heteralocha acutirostris. Three other species are described but not figured, Hieracidea brunnea, Nestor occidentalis and Halcyon vagans, into the history of all of which Mr. Buller has fully entered.

Of Hieracidea brunnea, the sparrowhawk of the colonists, the bush hawk of Mr. Buller, that gentleman gives the following interesting particulars.

"The natives state that this little hawk usually builds its nest in a bunch of puwharawhara, often at a great elevation from the ground, forming it rudely of loose materials; that it lays generally two, but sometimes three eggs, and that the young birds remain on the tree for several days after quitting the nest. The puwharawhara (*Astelia Cunninghamii*) is a parasitical plant, with short, thickly-set flag leaves, radiating upwards from a clump of roots, by which it adheres firmly to the parent tree. These plants, which often attain a circumference of many feet, are very common on the forks and naked branches of aged or withered trees on the outskirts of the forest, a single tree sometimes supporting twenty or more of them. A better situation for a hawk's nest than the centre of one of these plants could hardly be selected, combining as it does the requisites of warmth, security and shelter; and the bush hawk seems to be instinctively aware of this. Some years ago I was informed that a pair of these birds had bred for several successive seasons in a nest placed as described, and situated in the high fork of a dead kahikatea tree near the Horowhenua Lake. Having waited for the breeding-season, I offered the natives a half-sovereign each for the eggs; but although excellent climbers, they failed in all their attempts to reach the nest. They afterwards observed the hawks carrying mice, lizards and small birds to their young, and the latter, on quitting the nest, were shot and destroyed. When I last visited the spot the old kahikatea was still standing, and the bunch of withered *Astelia*, which had cradled several successive broods was still clinging to the tree; but the persecuted hawks had quitted their exposed eyrie for some more secure retreat.

“In the summer, however, of 1867, during a visit to Taupo, I was fortunate enough to find the nest of this species. We had fixed our bivouac for the night on the banks of the Waitangi Creek, only a few miles from the base of the grand snow-capped Ruapehu. Our native companion soon detected the old hawks carrying prey to their young, and on the following morning he discovered the nest. It was situated on the ground, under cover of a block of trachyte, which cropped out of the side of the hill. There had been no attempt to form a proper nest, but the ground was covered with the feathers of birds (almost entirely those of ground larks) on which the young hawks had been fed. The latter were three in number, of different sizes, the largest being apparently three weeks old, and the smallest scarcely a fortnight. They were extremely savage, striking vigorously with their sharp talons and uttering a peculiar scream. While we were engaged in securing them in a basket, the old birds were flying to and fro, occasionally dashing up to within a few feet of us, and then off again at a sharp angle, alighting at intervals, for a few moments only, on the rugged points of rock above us, but never uttering a sound. They were in perfect plumage, and when they occasionally poised their bodies overhead, with outspread wings and tail, they presented a very beautiful appearance. During our journey of forty miles through the bush, the gun supplied the young hawks with a sufficiency of food; but they were very voracious, two large pigeons *per diem* being scarcely enough to appease their joint appetites. Fifty miles more by canoe, and about forty on horseback, brought the captives to their destination, when they were placed in a compartment of the aviary. They continued to be very vicious, punishing each other severely with their claws. The youngest one was an object of constant persecution, and ultimately succumbed to a broken back. A small tame sea-gull that had unwittingly wandered into the aviary, through an open doorway, was instantly pounced on, although the young hawks, in their unfledged condition, could only move by hopping along the ground. In about three weeks these birds (which proved to be male and female) had fully assumed the dark plumage, and for about two months after they were very clamorous, especially during wet or gloomy weather. By degrees they became less noisy, till at length they were perfectly silent and moody, never uttering a sound for weeks together, with the exception of a peculiar squeal when they were fighting. A more quarrelsome couple never existed, the female, being the larger and stronger bird, generally came off best, leaving the male severely punished about the head. At the end of six months the climax was reached by her actually killing and devouring her mate. I found the aviary strewn with feathers, and the skeleton of the poor victim picked clean! The surviving bird underwent a partial moult in the month of September following, and the plumage began to assume a spotted character. The legs also became slightly tinged with yellow. By the beginning of March in the following

year she had acquired the full adult plumage, except that the throat and spots on the sides were not so light as in more mature examples. The legs had changed to a pale greenish yellow, and the irides from lustrous black to a dark brown colour, the cere retaining its pale blue tint, but with indications of a change to yellow. After two months absence I again saw the bird, and noticed that the lores were becoming tinged with yellow, while the colour of the legs had deepened. Unfortunately, at this stage she was found dead on the floor of the aviary, and on dissection, I found in the cavity of the back an amazing number of parasitical worms, many of them measuring from six to eight inches in length."—P. 8.

Of *Spiloglaux Novæ-Zelandiæ*, the New Zealand owl, or more-pork of the colonists, the *ruru*, *koukou* and *peho* of the natives, we have the following information.

"The Hon. Mr. Stafford, who has for many years interested himself in the introduction and acclimatization of useful birds, has also given evidence against the more-pork on this charge, for he has assured me that on one occasion, having turned out a large number of insectivorous birds in his grounds at Wellington, an unusual number of owls sought harbour there, and preyed on the little immigrants till scarcely a single one remained. For a considerable time, however, it was doubted whether the more-pork was destructive to acclimatized birds, and a lengthy controversy on the subject appeared in the Auckland newspaper. The careful observations of Mr. Brighton, the curator of the local Acclimatization Society, at length placed the matter beyond all discussion. Frequently he had to forego his night's rest in order to watch the aviaries, and during a period of only a few months he shot no less than fourteen of these birds. Some of these were surprised in the act of attacking the aviaries, and all of them in the immediate vicinity. He repeatedly found the dead and lacerated bodies of skylarks and chaffinches lying on the wooden ledge just inside the eave of the wire roofing, and the abundance of more-pork feathers found entangled in the netting afforded a clue to the perpetrator of these murderous attacks. From the appearance of the feathers and the mutilated condition of the dead birds, it was evident that the more-pork had tried hard, but unsuccessfully, to pull them through the wire netting in the roof. The following account, by the curator, renders this perfectly intelligible:—'The aviary is constructed in the usual manner, on the model of a bird-cage, of wire netting, over a wooden frame-work, with a sloping roof also of wire netting. Attached to the frame-work, comprising the wall-plates, on either side, there are wooden ledges, resembling shelves, on which the larks rest at night, while the chaffinches roost upon twigs planted within the aviary, and reaching within a few inches of the wire netting of which the roof is composed. During

moonlight nights the more-porks have been seen to fly upon the roof of the aviary, and after making, as it were, a reconnaissance of the defences, to pounce repeatedly against the wire, causing a loud vibration, and startling the feathery inmates. These, in their flight, fly towards the light, dashing themselves towards the wire netting, until the more-pork, by hopping about on the roof, succeeds in fastening upon one of them, and of course, making short work of him. There has, in consequence, been a crusade against the more-pork in many parts of the country. But whether this wholesale destruction of an indigenous species, on account of these predatory habits, is wise, or even prudent, may be seriously questioned. The more-pork, as we have already shown, not only preys on rats and mice, but is also a good insectivorous bird, with a voracious appetite. Its habits of feeding largely on the Nocturnal Lepidoptera is of itself an inestimable benefit to the agriculturist, and tends to check the spread of the caterpillar, whose ravages are becoming more severely felt every year. It is a dangerous thing to disturb the balance of Nature by violent means, and, in a new country especially, we must be careful that in removing one evil we are not opening the door to an immeasurably greater one. For my own part, I consider the killing of a single owl a positive injury to the farming industries of the country, and scarcely compensated for by the introduction of a score of soft-billed insectivores in its place. I have sometimes found this species at night among the rocks along the sea-margin, from which it may be inferred that crabs and other small Crustacea contribute to its support. In the stomachs of some I have found remains of the large wood-beetle (*Prionoplus reticularis*), and those of others I have found crammed with moths of all sizes, or with nocturnal Coleoptera. I examined some castings of the more-pork in the Canterbury Museum. They are hard pellets, of an oval form, and of the size of a sparrow's egg, composed chiefly of the hard elytra and heads of various coleopterous insects, among which I noticed particularly the shining covering of the mata (*Feronia antarctica*), a handsome ground-beetle which is found on the Canterbury plains, but does not occur in the North Island. The flight of this bird is light, rapid, and so noiseless that, I verily believe, it could surprise and capture a mouse at the very entrance to its burrow. On examining the feathers of the wing, it will be found that they are furnished with a soft or downy margin, and are specially adapted for this manner of flight. From an examination of the orifice of the ear we are led to infer that the power of hearing in this owl is very acute. It is therefore the more surprising that, on two occasions after dark, I have succeeded in seizing this species with the hand, when perched on the eaves of a veranda, over which its tail projected. When caught, it manifests its anger by a repeated clicking of the mandibles, while it dexterously uses its beak and talons in its appeals for liberation. Besides the cry, which gives this owl its popular name, it has a peculiar call, which is not unlike the alarm cry

of the Australian rosebill parrakeet (*Platycercus eximius*), but louder and more shrill. At dusk, also, before leaving its retreat, it utters a low croaking note, quickly repeated, which is responded to by the other owls within hearing. This note resembles the syllables 'kou-kou,' uttered from the chest, and among the northern tribes the bird is usually called by a name resembling that cry. It is, however, more generally known as the 'ruru,' and in some districts as the 'peho.' It nidificates in hollow trees; but I have never been fortunate enough to obtain the eggs. They are described as being two in number, nearly spherical in shape, and of pure whiteness. The young leave the nest about the beginning of January, and may be heard during every night of that month uttering a peculiar, sibilant, snoring sound. But the breeding is sometimes delayed to a much later period of the year, for, on one occasion, at the North Shore (Auckland), I both heard and saw a young bird so late as the 11th of April. So far as I have been able to ascertain, the young are always two in number. Mr. Gilbert Mair found a nest of this species in the hollow of a dry hinau tree (*Elæocarpus dentatus*), containing two very young birds, which were covered with soft, white down, plumbeous beneath." Mr. Potts records a similar discovery in Canterbury. In a clump of wood on the banks of the Waisoa River, I found a nest, also containing two fully-fledged young ones. I sent my native lad, Hemi Tapapa, up the tree to capture them, and while he was so engaged, the parent birds came forth from their hiding-place, and darted at his face with a low growling note, making him yell with fear. The Maories share in the almost universal feeling of superstition regarding the owl. Hemi's conscience was troubled; and as the shades of night were closing in upon us, with the call of 'more pork!' in every direction, he handed me the captives and hurried away from the scene of his exploit, evidently sharing, in some degree, the horrors of that luckless wight, immortalized by Mr. Stevenson in his 'Birds of Norfolk,' who, having killed the church owl as it flitted past him, ran shrieking home and confessed his awful crime, 'I've been and shot a cherubim!"—P. 19.

Of the owl-parrot, the most interesting of all parrots, we have a long and exhaustive account: it seems needful to make a few extracts from this, but it would be undesirable to reprint it entire, seeing that we have so large a literature of the kakapo already. Since the first discovery, or rather first announcement of the existence of a kakapo, it has been the laudable aim of ornithologists to collect and circulate every scrap of information that it was possible to obtain respecting this strange bird.

"*Stringops habroptilus*.—This is one of the very remarkable forms peculiar to New Zealand, and has been appropriately termed an owl-parrot.

As its name *Stringops* indicates, its face bears a resemblance to that of an owl, and our knowledge of the structure and habits of the bird would seem to prove that it supplies in the grand scheme of nature the connecting link between the owls and parrots. In all the essential characteristics of structure it is a true parrot; but in the possession of a facial disk (in which respect it differs from all other known parrots), in the soft texture of its plumage, and especially in its decidedly nocturnal habits, it betrays strong affinities to the owl tribe. Its toes, as in all other members of the order, are zygodactyle; but as pointed out by Mr. T. W. Wood, in an interesting article communicated to the 'Student' (1870, p. 492), the foot of an owl, when the bird is perched, considerably resembles that of a parrot, as the outer toe is then placed backwards with the hind one, so that the bird's feet may be said to be temporarily zygodactyle, whereas those of the parrot are permanently so. * * * *

"Although exclusively a vegetable-eater, its habit of hiding during the day in holes of trees and dark burrows, exhibits a further point of resemblance to the nocturnal birds of prey. As these latter are in reality night hawks, so is this bird, what the native name 'kakapo' implies, a night parrot; and the analogy thus presented, harmonizes with the idea of its being the connecting link between the *Accipitres* and *Psittaci*.

"The feathers surrounding the eyes and filling the lores differ from those on the other parts of the body not only in being of a lighter colour, but also in form and structure, being narrow and penicillate, with the shaft considerably produced. Those overlapping the base of the lower mandible are more stiff and elongated.

"All who have studied the bird in its natural state, agree on this point, that the wings, although sufficiently large and strong, are perfectly useless for purposes of flight, and that the bird merely spreads them to break the force of its fall in descending from a higher point to a lower when suddenly surprised; in some instances (as one of the writers quoted below informs us) even this use of them is neglected, the bird falling to the ground like a stone.

"We are naturally led to ask how it is that a bird possessing large and well-formed wings should be found utterly incapable of flight. On removing the skin from the body it is seen that the muscles by means of which the movements of these anterior limbs are regulated, are very well developed, but are largely overlaid with fat. The bird is known to be a ground-feeder, with a voracious appetite, and to subsist chiefly on vegetable mosses, which, possessing but little nutriment, require to be eaten in large quantities; and Dr. Haast informs us that he has sometimes seen them with their crops so distended and heavy that the birds were scarcely able to move.

"These mosses cover the ground and the roots or trunks of prostrate trees, requiring to be sought for on foot; and the birds' habit of feeding at

night in a country where there are no indigenous predatory quadrupeds, would render flight a superfluous exertion, and a faculty of no special advantage in the struggle for existence. Thus, it may be reasonably inferred that *disuse*, under the usual operation of the laws of nature, has occasioned this disability of wing; for there is no physiological reason why the kakapo should not be as good a flyer as any other parrot.

“Conformably also with the doctrine of natural selection, we have here another striking instance of the law of assimilative colouring, which obtains more or less in every department of the animal kingdom. Nature has compensated this bird for its helplessness, when compelled to leave its hiding-place in the daytime, by endowing it with a mottled plumage so exactly harmonizing with that of the green mosses among which it feeds, that it is almost impossible to distinguish it.”—P. 29.

The kaka parrot has already been made so familiar to my readers by the interesting and detailed account of him from the pen of Mr. Potts (S. S. 2799—2802 and S. S. 2853—2855) that I need add nothing from Dr. Buller’s pen, but passing on to the huia (*Heteralocha acutirostris*) I will make a few short extracts.

“An article in ‘Nature’ (June 23) bearing the initials of a well-known naturalist, notices the arrival of a living example of the huia (*Heteralocha gouldi*) at the Zoological Society’s Gardens, London. The specimen was a male bird, and the writer in describing the peculiarity in the form of the bill that distinguishes it from the female, observes:—‘Such a divergence in the structure of the beak of the two sexes is very uncommon, and scarcely to be paralleled in the class of birds. It is difficult to guess at the reason of it, or to explain it on Darwinian or any other principles.’

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“The peculiar habits of feeding, which I have described from actual observation, furnish to my own mind a sufficient ‘reason’ for the different development of the mandibles in the two sexes, and may, I think, be accepted as a satisfactory solution of the problem.

“Before proceeding to speak of the bird itself, I would remark on the very restricted character of its habitat. It is confined within narrow geographical boundaries, being met with only in the Ruahine, Tararua, and Rimutaka mountain ranges, with their divergent spurs, and in the intervening wooded valleys. It is occasionally found in the Fagus forests of the Wairarapa Valley, and in the rugged country stretching to the westward of the Ruahine Range, but it seldom wanders far from its mountain haunts. I have been assured of its occurrence in the wooded country near Massacre Bay (Province of Nelson), but I have not been able to obtain any satisfactory evidence on this point. It is worthy of remark that the natives, who prize

the bird very highly for its tail-feathers (which are used as a badge of mourning), state that, unlike other species which have of late years diminished and become more confined in their range, the huia was, from time immemorial, limited in its distribution to the district I have indicated.

“My first specimen of this singular bird (an adult female) was obtained in 1855, from the Wainuiomata Hills, a continuation of the Rimutaka Range, bounding the Wellington Harbour on the northern side,—the same locality from which Dr. Dieffenbach, nearly twenty years before, received the examples figured by Mr. Gould in his magnificent work on the Birds of Australia. I have since obtained many fine specimens, and in the summer of 1864 I succeeded in getting a pair of live ones. They were caught by a native in the ranges, and brought down to Manawatu, a distance of more than fifty miles, on horseback. The owner refused to take money for them, but I negotiated an exchange for a valuable greenstone. I kept these birds for more than a year, waiting a favourable opportunity of forwarding them to the Zoological Society of London.

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“For some days they refused to eat anything but huhu, but by degrees they yielded to a change of food, and at length would eat cooked potato, boiled rice, and raw meat minced up in small pieces. They were kept supplied with a dish of fresh water, but seldom washed themselves, although often repairing to the vessel to drink. Their ordinary call was a soft and clear whistle, at first prolonged, then short and quickly repeated, both birds joining in it. When excited or hungry they raised their whistling note to a high pitch; at other times it was softly modulated, with variations, or changed into a low chuckling note.

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“But what interested me most of all was the manner in which the birds assisted each other in their search for food, because it appeared to explain the use, in the economy of nature, of the differently formed bills in the two sexes. To divert the birds I introduced a log of decayed wood infested with the huhu grub. They at once attacked it, carefully probing the softer parts with their bills, and then vigorously assailing them, scooping out the decayed wood till the larva or pupa was visible, when it was carefully drawn from its cell, treated in the way described above, and then swallowed. The very different development of the mandibles in the two sexes enabled them to perform separate offices. The male always attacked the more decayed portions of the wood, chiselling out his prey after the manner of some woodpeckers, while the female probed with her long pliant bill the other cells, where the hardness of the surrounding parts resisted the chisel of her mate. Sometimes I observed the male remove the decayed portion without being able to reach the grub, when the female would at once come to his

aid, and accomplish with her long slender bill what he had failed to do. I noticed, however, that the female always appropriated to her own use the morsels thus obtained."—P. 64.

The only other extract I will make is from the description of the kingfisher. It contains a vast amount of the soundest Natural History teaching, and seems to combine in an eminent degree the new with the true. It is peculiarly gratifying to myself to have this evidence of the kingfisher's omnivorous appetite, of its accipetrine propensities, and of its capability of boring a tree for nesting purposes. All these accounts, these traits of character, enlarge the boundaries of our knowledge and teach us the danger of generalizing on imperfect or insufficient data. It is extremely amusing also to learn of the existence of Associations for destroying kingfishers because they interfere with the desired increase of sparrows; just as in Scotland the edict went forth for the destruction of hawks and eagles because they interfered with the increase of grouse and wood pigeons. The Scotch succeeded to admiration: I now receive similar appeals for assistance in the crusade against wood pigeons and sparrows.

"The flight of this species is short, rapid and direct, being performed by a quick vibration of the wings. It flies with considerable velocity, and I have known several instances of its dashing headlong through a pane of glass. On one occasion this occurred in the church at Raglan during divine service, and the kingfisher, after recovering from the shock, remained to the last perched on the end of a pew, looking more devout, says our correspondent, than the jackdaw of Rheims! Another instance occurred more recently at Wanganui, where, according to a local paper, the family of the Rev. C. H. S. Nicholls were startled one day at dinner by the entrance of a kingfisher which 'flew through a pane of glass in one of the windows, scattering the fragments around,' and was forthwith made prisoner by the household cat. Its food consists of lizards, small fish, grubs, earth-worms, locusts, insects of all kinds, and even mice. On examining a young kingfisher just taken from the nest, I observed the tail of a half-grown mouse protruding from its bill, and on taking hold of it I drew the un mutilated carcase of the rodent from the throat of the bird. I was not previously aware that mice formed part of the kingfisher's bill of fare. I have often, however, witnessed its fondness for lizards, two species of which (*Mococa Zelandica* and *M. ornata*) are very common in all the open glades. I have seen it seize the nimble little reptile by the tail, and after battering its head against a stone or the branch of a tree, to destroy life, swallow the captive head foremost. It has been known to attack and kill chickens in the

poultry yard. On one occasion, at Otaki, I saw one of these birds dart down into the midst of a very young clutch; but the old barn-door hen proved too active, and with one rapid stroke of her bill put the assailant *hors de combat*. The bird was picked up stunned with the blow, but soon after recovering itself escaped from the hands of its captor. In Wanganui it provoked the hostility of the Acclimatization Society by preying on the young of the house sparrow (*Passer domesticus*), which had been introduced at much expense, and the Committee encouraged a crusade against the offenders by offering a premium for kingfishers' heads. According to the report of the Auckland Acclimatization Society for 1868—69, it has proved very troublesome in destroying birds, and has even attacked and killed a Californian quail. In Otago it has been accused of purloining the speckled trout; and in Canterbury it was found necessary to protect the newly-hatched fish by stretching wire-netting over the shallow artificial streams. A valued correspondent, and very careful observer, informs me that on one occasion he killed a black fish, about twelve feet long, in Whangarei Harbour, and dragged it ashore, and on visiting the place a few days later he observed an unusual number of kingfishers present; on watching them he found that they were preying on the swarms of flies attracted by the dead cetacean, darting after them with the swiftness of an arrow, and capturing them on the wing. When engaged in fishing, it does not plunge into the stream like the common British kingfisher, but dips into it lightly as it skims the surface of the water or darts downwards from its post of observation on a rock or overhanging branch. The New Zealand kingfisher commences to breed towards the end of November or early in December, usually selecting for its nesting operations a tree denuded of its bark and decayed at heart, standing near the margin of the forest or in an old Maori clearing. By means of its powerful bill it cuts a round passage through the hard exterior surface, and then scoops out a deep cavity, proceeding in a horizontal direction for several inches, and then downwards to an extent of ten inches or more. The bird thus instinctively protects its chamber from the inclemencies of the weather. There is no further attempt at forming a nest, the eggs being deposited on a layer of pulverized decayed wood, the shavings and sawdust, so to speak, of the borer's operations in finishing the cavity. The eggs are generally five in number, sometimes six, broadly oval in form, and measuring 1.2 inch by 5.9. They are of the purest white, with a smooth or polished surface and very fragile in texture; sometimes the shell is marked by minute limy excrescences at the larger end. The labour of boring a cavity is often greatly augmented by natural impediments. If, after drilling through the hard external surface, the bird finds the inner wood too hard for its tools, it at once abandons the spot and sounds the tree in another place. I have counted half-a-dozen or more of these abortive borings on a single tree, in addition to the finished one, affording evidence of indomitable perseverance

on the part of the bird, and a determination not to forsake a tree which it had instinctively selected as a suitable one for its operations. In two instances, however, I have known the kingfisher to adopt an existing hollow in a partially decayed kahikatea tree, dispensing altogether with the labour of boring and forming it. The nestling of this species is a very curious object. On bursting from the shell, it presents the following appearance: the abdomen, as in most young birds, is perfectly bare; on the other parts each feather is encased in a sharp-pointed sheath of a grayish colour, closely studded, and bristling like the quills of a porcupine. Before the young bird quits the nest, the sheathings gradually burst, exposing the true feathers in all their brilliancy; vestiges, however, of this spiny condition, adhere to the fore parts of the head for several days after the birds have quitted their cell. On being alarmed or excited, the young kingfisher utters a prolonged rasping cry, sounding very harsh to the ear. The parent birds are very fierce when their nest is molested, darting into the face of the intruder, and flying off again, with a loud, quickly repeated note of alarm. In the Canterbury province, where timber is scarce, it more frequently burrows a hole in a bank, and often near the sea beach. On examining one of these holes Mr. Potts observed that the bottom inclined slightly upwards from the entrance, and that the eggs were deposited on a layer of crustacean remains about a foot from the outside. The exuviae within the nest consisted of mud, with numerous remains of Crustacea and the wings of coleopterous insects."—P. 70.

The illustrations in the first number, the only one yet published, are excellently drawn by Mr. Keulemans, who always aims at the representation of living birds rather than the conventional attitudes of birdstuffers' specimens. They are well coloured by hand, and thus the work is rendered as ornamental as it is useful. I have only to add that I cordially recommend the 'History of the Birds of New Zealand' to the readers of the 'Zoologist,' and that I sincerely wish it every success.

EDWARD NEWMAN.

Notes on the Birds of New Zealand. By T. H. POTTS, Esq.
(Concluded from Zool. S. S. 3056.)

Weka or Wood-hen (*Ocydromus australis*, *Sparrm.*).—The history of the weka, the wood-hen of the settlers, is not yet complete; there exist varieties which are marked, although ornithologists might object to class them as distinct species.

Whilst camping in one of the gorges of the Rangitata, a very striking variety used to visit the tent constantly; the individuals of

either sex were above the average size; the general colour of the plumage light grayish brown; the feathers marked or barred with shades of dark brown; the uropygium, and in some instances the tips of the primaries, rich chestnut; throat and cheeks gray. The young were dark brown, perhaps not to be distinguished readily, if at all, from the young of the ordinary brown weka.

Some months since, a specimen with the entire plumage of pure white, was caught alive at Mount Four Peaks; the legs and bill pale red; irides reddish brown;—not the light pink that is characteristic of the albino.

One of the best walkers amongst our birds, the weka's step is usually deliberate and slow; its carriage is particularly noticeable, it is so remarkably bold and confident, yet wary; the neck raised, with the head carried forward with a listening and yet contemplative air, one is loth to believe that the bird is such a mischievous rogue. When at full speed the neck is extended, the head lowered, with the point of the beak slightly depressed; if pursued, it turns and doubles rapidly, availing itself of any shelter in which to find refuge. It regains confidence quite as readily as it exhibits fear, and if left in peace, emerges from its place of concealment with the same coolness of demeanour that usually distinguishes it. We have caught a whole family of old and young; after being released they started off, but returned soon afterwards with their ordinary air of inquisitiveness. When two males quarrel they fight with determination, sometimes coming out into the open ground; the victor becomes a relentless persecutor, driving off his antagonist at every opportunity: on these occasions one can appreciate the speed and alertness which both pursuer and pursued display, in getting over the ground and threading the interlaced maze of shrubs and grassy tussocks.

The nest is placed amongst the sheltering leaves of snow-grass tussocks, in which the roughly-finished home of the weka is frequently constructed.

The colour of the down of the young affords a fair indication of their age, the darker shades of brown characterizing extreme youth, yet the lighter shades which their plumage gradually assumes, offer great variety. Such is our experience after quietly looking at some scores of broods; there is in their early stage of growth a resemblance to the Cochin China chick about them—this would be stronger but for their smooth tarsi and dusky hue; perhaps this

idea is due to the absence of even an apology for a tail, for the caudal plumage is not assumed until half their growth is reached, but whilst they are still under the guidance of the parent birds. Whilst being led forth food-hunting, the brood is most sedulously attended by the old birds, although perhaps they may not be at one time both close together; insects, worms, lizards, &c., seem their principal food, yet nothing comes amiss to these omnivoræ. When an old bird is aware of a lizard lying *perdu* beneath the sharp-pointed leaves of an *Aciphylla*, the beak is thrust into the plant in defiance of threatened wounds, the wings are suddenly thrust forward, and the adroit weka backs out with her writhing prey, which the young instantly devour.

Although mercilessly persecuted, this Ishmael amongst birds may be found or heard in most up-country districts, but in greatly diminished numbers. The size of the wekas that are now usually met with is much smaller than it used to be; a four-pound bird is now almost unknown, yet, years ago, such a weight was not an uncommon one for a fine hill-bird. The greatest sin we can lay to its charge is the ruthless manner with which it destroys ducks' eggs, in which it is second only to the harrier.

The weka sometimes, yet rarely, has been noticed to have a white feather or two in the wing.

As an article of food, it is in far less repute than when we first settled here in the days of dear meat (we have since bought sheep at one shilling per head); our taste is more fastidious, and the weka is only killed, too often, for mere wantonness, or the *pleasure of taking life*. The Maoris of Arowhenua make expeditions in the winter for obtaining a supply of these birds, which they preserve in their own fat. On one run, near Burke's Pass, we have been told that about two thousand wekas were secured by a party of natives at one of these hunts.

White Tern, *Sterna* (alba, sp. nov.? Potts).—On the 4th of January, whilst crossing "the plains," from the Rangitata to the Rakaia, amongst a large number of the common tern (*S. antarctica*), wheeling and hovering about one of the streams of the Ashburton, we first observed this white bird. The shingly river bed about this spot had been selected as a breeding-place by the common tern, for, crossing it about five weeks previously, we had noticed many of their dusky-coloured eggs lying in couplets on the bare gravel.

On sighting the white tern we left our horses to graze on the soft grass that fringed a rippling creek, and watched its movements with great interest; the orange-billed *S. antarctica*, vociferous and bold, flew screaming, with rapid darts, close enough to be reached with a riding-rod, marking their irritation at our intrusion by swooping close to our faces, sometimes ejecting a whitish fluid on us; the stranger, less confident, kept rather aloof, with a different style of flight to that of its congeners, less rapid, but not to our thinking did this arise from any lack of power; the wings appeared more bent, the stroke more deliberate. As we watched its devious course up and down the stream, its pure white plumage was easily followed; sometimes it skimmed over the surface of the swiftly flowing river, or hung hovering for a few moments a few feet above, now and then rising to a considerable height, often to an elevation only reached by a few of its busy companions. Several times it was observed to settle on the shingle, soon rising again, wheeling about with renewed activity. As the tern's breeding season, in this country, may be considered at its height at this time, we should be inclined to think that the stranger was nesting here.

The entire plumage was white, upper, lower surface, and *head* also; the bill appeared to be light-coloured. Our observations were made chiefly during its rapid movements, so that of the bill, tarsi and feet, we cannot pretend to give a reliable description.

Great Shag, Cormorant, Phalacrocorax (Graculus) carbo, Linn.
—This large species of our native Pelicanidæ must enjoy a most extensive range, as there appears to be not much doubt of its identity with the European cormorant, which is met with in the highest latitudes of the northern hemisphere; it would seem that it was formerly known sometimes as the sea-raven or crow, from its rapacity. It is worth recalling, that our eldest poet, that great student of Nature, mentions these birds together in two consecutive lines:

“The hote *cormèraunt*, full of glotonie
The *ravin* wise, the *crowe* with voice of care.”

This fine-looking bird, one of the most industrious of fishers, appears to be generally distributed throughout the country: unlike *G. punctatus*, *G. brevirostris*, and others, it is of rather solitary habits, whereas those species delight in the association of numbers,

their rapid motions imparting an air of liveliness and gaiety to the rocky wave-worn coast-line, or the placid waters of the deep inland lake. It is usually classed as a sea bird, yet, although it frequents our coasts and harbours, it is to be observed a great way inland, and, taking the width of the island into consideration, a very long distance from the sea; we have noticed it to the west of Lake Coleridge. Except during the breeding season, it may be said to pass rather a solitary life; its favourite post, where obtainable, is the outstretched limb of some blasted tree on the verge of the bush, or a ledge of rock near to a stream or lake; but although thus solitary, it is by no means to be considered shy or timid; it does not "fly the haunts of men." We have often observed it perched on the lofty chimneys of the public buildings in Christchurch; two years since a mass of its nesting materials was cleared away from some part of the roof.

This ruthless desecration of the lares and penates did not cause the abandonment of the settlement; with the clear sparkling Avon flowing immediately below, the situation was too good a one to be forsaken without the display of more active hostilities. These favourite posts still continue to be frequently occupied, notwithstanding that birds are sometimes shot there, for the protection of the young trout, with the acclimatisation of which our silent fisher unwisely interferes.

Its flight occasionally is very lofty, seldom very straight; from watching its progress whilst soaring or wheeling aloft, one might imagine it to be trying "great circle sailing;" it approaches and glides to its perch with sweeping curves rather than by a direct course; its appearance is the signal for alarm amongst all poultry within reasonable distance, yet it is harmless and peaceable except where fish are concerned. After much occupation on or in the water, it has a knack of drying its feathers in a peculiar manner, which gives it a most grotesque appearance; it stands, say on a sunlit rock, stretching out its quivering wings horizontally, till it really looks not at all unlike the old-fashioned sign of the "spread eagle."

Its activity in the pursuit of its finny prey is indeed remarkable, and, as is well known, in some countries led to the taming of the bird for the purpose of rendering this dexterity of service to man: one of the old offices in the royal household of England was that of Master of the Cormorants.

Its breeding-station sometimes is shared by others of the species, whose nests are built in pretty close proximity; sticks, probably decayed leaves of *Phormium*, and coarse grasses, furnish the materials of these structures, which yield, from the accumulated filth, a powerful and disagreeable odour. The eggs, at most four in number, are long ovoidconical in shape; they are greenish white, covered with chalky incrustations; they measure two inches five lines in length, and one inch six lines in breadth. The young birds remain in the nest till they have attained a considerable size.

In the neighbourhood of Christchurch, not very far from the sea, is, or rather was, a swamp of considerable extent, which was selected some years since as a breeding-station by certain species of our numerous family of the Graculidæ. Numbers of birds were attracted to the spot; a visit to this nursery ground showed them in multitudes, arriving, departing, or stationed in quaint attitudes about the huge tufty heads of the pendant-leaved *Carex*. It was noticeable that the tops of the Maori-heads were almost invariably occupied by the large coarsely-built homes of *G. carbo*: beneath, against the dark tufted root-stems, the less ambitious little river shags reared their offspring. Unsavoury odours, of a most penetrating kind, pervaded this colony and its neighbourhood, from the great accumulation of slimy exuvix; one could conceive that it was possible for the sea-washed rock to be changed into the gûano island—it would be simply a sum in multiplication worked out by Time. Without staying to moralize on the fact that the same great Chemist transmuted the poison stench of one age into a commercial item which has afforded employment to thousands of human beings in another, we may mention that our little colony was not without its value, outside of its purpose for bird incubation.

As the explorer somewhat carefully picked his way, his advancing footsteps shaking the trembling morass, eels of the largest size, disturbed, were observed threading the watery mazes of the quaking bog, their bulk and condition proofs that the bird colony furnished them with abundance of fattening food. The following year this locality was abandoned by the shags, who established themselves on a swamp by the Purakanui; this likewise was deserted at the next breeding season. Why? If this change of quarters was rendered necessary by the presence of vermin or filth, how is the

guano island built up, unless, indeed, the salt breezes of the ocean befriend the birds by destroying their parasitic tormentors.

[Here ends my notice of Mr. Potts' paper, and I think every reader will admit that it contains the most valuable as well as the most interesting information that has ever been published respecting the birds of New Zealand. The details of the structure and habits of that strange wader, the crookbilled plover, have never been surpassed, either in their importance to the systematic naturalist or their attractiveness to the general reader: they most forcibly illustrate my old axiom that it is not in the closet or the museum, but in the woods and wilds, that Nature can be studied to the greatest advantage.

Scarcely have I lain down the labours of Mr. Potts when my attention is invited to 'A History of the Birds of New Zealand,' by Dr. Buller, a work still more attractive on account of its illustrations, and likely to be still more useful on account of its promised completeness. We shall now become as intimately acquainted with the birds of New Zealand as with those of Britain, and much more so than with those of the countries nearer to our home.—*Edward Newman.*]

Ornithological Notes from North Lincolnshire.

By JOHN CORDEAUX, Esq.

MARCH AND APRIL, 1872.

Redwing.—March 6. Last observed; a flock of about sixty. They left us very early this year.

Pied Wagtail.—March 9. Considerable numbers seen, both on our higher lands and in the marsh.

Curlew.—March 16. At the creek mouth this morning were seven curlews: they stood breast deep in the tide washing, afterwards arranging and smoothing down their plumage with their scythe-like bills. Close to the curlew, standing on one leg, with head buried between the shoulders, was an immature herring gull; then two common gulls (mature) and four "brown heads" in their summer caps, a flock of dunlins, one solitary hooded crow, and in shore eight scaup—four males and four females swimming in pairs. All these birds within about twenty or thirty square yards, forming altogether an interesting group.

Snipe.—March 16. After an absence of many weeks are returning towards the coast. I flushed seven couples this afternoon from two small patches of wet meadow.

Jack Snipe.—March 16. With the common snipe were three couples of jacks.

Golden Plover.—March 21. A flock of about two hundred on a wheat field: some of these had completed their seasonal change. I killed the last golden plover on the 18th of April, a well-developed male in full plumage.

Hooded Crow.—March 22. Have congregated in considerable numbers near the coast. Left us on the 1st and 2nd of April; wind N. Fourteen seen together on the 15th of April, none after this date. We have always a certain number of hooded crows remaining in our marshes for some time after the main body have left; these are perhaps old and knowing birds, "up to a thing or two." At this time (early April) our shepherds cut off the lamb tails, and these are left on the ground just where they happen to have been taken off, affording many a rich and luscious morsel to the cunning old crow. He always cleverly picks off the wool before swallowing the fat lump, and is often so engrossed in the work, and so reluctant to take wing, that he runs great risk of remaining for the season as a veritable "scarecrow," hanging head downwards above the growing corn.

Dunlin.—March 25. Many large flocks of dunlins on the flats; from 500 to 2000 in a flock; are now going northward.

Snow Bunting.—March 25. Last seen; five perched together on the stones of the river embankment.

Chiffchaff.—March 30. First heard.

Wheatear.—March 30. Wind N. First seen; a single bird. April 1st., afternoon; cold and rainy, wind S.E. Several seen, two perched on a bush. A day or two later I saw four all together, perched on hawthorn and ash twigs in a hedgerow.

Chimney Swallow.—April 1, morning: wind S.E., very cold, with sweeping rain squalls. A chimney swallow hawking close to the ground in one of our marsh pastures. I watched it for some time as it flew to and fro round my horse. This is nine days earlier than any I have previously recorded in North Lincolnshire. No more seen till the 12th, the usual time for them to come, when I saw four together hawking about a horse-pond, a very favourite spot, where we nearly always first see them. The main body were very late in coming; few could be seen before the end of the last week in the month.

Rook.—April 7. Young rooks perching on trees near nests. The

popular belief I find is that the old rooks starve, or only half-feed, their young, often leaving the nest in order the sooner to tempt them away into the fields; knowing full well that with full stomachs they could not exert themselves, but hang about the rookery till shot.

Starling.—April 9; wind W. to N.W., a strong breeze. Very large flock of migratory starlings seen on coast. None after this date.

Fieldfare.—April 10 to 16. Many large flocks in the coast marshes. Last seen on the 16th.

Willow Wren.—April 11. Heard and seen.

Jack Snipe.—April 11. Last seen, a single bird.

Iceland Gull.—April 18. There was an Iceland gull in a field near the Humber for several hours this morning. My men were sowing oats at the time, and by walking close up to the teams I had an unusually favourable opportunity of observing this stranger, evidently, along with other gulls, attracted by the freshly scattered seed. Its size was that of an average herring gull, perhaps a little less, but with the wings proportionately longer; these struck me as unusually long for the size of the body, and not only longer, but narrower and more pointed than the herring gulls, and from what I saw I should say its powers of flight are decidedly superior to that species. The marvellous ease and power with which, with long sweeps and graceful curves, it beat nearly dead to windward against a more than half-gale from the north, showed no ordinary strength of wing. It was not fully adult, but apparently about assuming the mature plumage. There was not a single spot of really dark colour about it: the head, neck, tail, under surface and primaries looked pure white; the back and wing-coverts at a short distance a dirty white, but viewed through a powerful binocular had a bluish gray tinge, lighter than the same parts in the herring gull; cropping forth through this I could detect many very pale yellowish brown feathers, and these it was that gave that soiled look to the upper plumage, quite spoiling the beauty of the bird. Here and there too was a feather darker than the rest, and this gave somewhat a spotted appearance. The darkest parts about the bird (but dark only in comparison) were the wing-coverts along the edge of the wing. It did not consort with the other gulls, but kept alone, and was persecuted whilst I remained in the field, by two carrion crows and afterwards by the peewits, who seemed well aware it was out of its

latitude, and had no business in our Lincolnshire marshes. Later in the day I found it sitting solitary near the centre of one of the pastures, from which it shortly rose and swept out seaward.

Greenfinch, Linnet and Yellow Bunting.—April 20. Remained in flocks up to the end of the third week in the month. April 17th to 21st inclusive. Wind N., very cold, with heavy beating rain from the north on Sunday the 21st.

Whitethroat and Tree Pipit.—April 22. Wind S.E., warm and fine. First appearance.

Cuckoo.—April 23. Wind S., very warm. Heard the cuckoo: a pair seen, evidently a male and female. We almost invariably find them in pairs on their first arrival.

Gray Plover.—April 24. Several seen on flats. A few in perfect summer plumage.

Whinchat.—April 26. First seen; one.

Grasshopper Warbler.—April 26. I heard two this afternoon in their favourite plantation.

Whimbrel.—April 26. First appearance on flats: three only seen.

Sand Martin.—April 29. First seen.

Tree Sparrow.—April 29. I noticed a rather interesting group on the road near our railway station this morning: four little birds together—two house sparrows, male and female, and a pair, male and female (both alike) of tree sparrows. The latter now nest regularly in the parish, being of much more common occurrence than formerly.

Sedge Warbler.—April 29. Several heard.

Blackcap.—April 29. This afternoon in a plantation I heard a blackcap singing. The song was loud, clear, distinct and varied with many thrush-like notes. To me it was like the voice of a friend from some distant land, as it was *the first occasion* on which I have listened to this delightful songster in this district. It is extremely rare in North Lincolnshire.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire,
May 4, 1872.

Ornithological Notes made in the neighbourhood of Plymouth during April, 1872. By JOHN GATCOMBE, Esq.

April 4. Visited "Pew Tor" (Dartmoor), on which I observed a pair of ring ouzels, and was told by some workmen that the birds had been seen there for more than a week. Saw many lapwings on the swamps, several kestrels hovering over the moor, and by the side of a river some gray wagtails with fine black throats. Wheatears numerous everywhere.

April 7. Again on Dartmoor. Ring ouzels uttering their somewhat wild and plaintive call-notes in every direction, more especially in the neighbourhood of "Tavy Cleave," at which place, when botanizing with some friends among the rocks, heath and furze, a few years since, we found several nests and eggs; and I feel perfectly satisfied that this species may be found annually breeding in suitable localities over the whole extent of the moor. I have remarked that when perched the position of the ring ouzel is more horizontal than that of the blackbird, but its alarm-note is very similar and its song not much unlike. It has a habit of hiding under rocks and large stones when pursued, and if found will suddenly start away with rapid flight to a long distance, emitting its chucking alarm-notes all the way. It also has the habit, especially when its nest is approached, of alighting on a rock or stone near, or hopping along the ground with drooping wings and elevated tail, at the same time uttering the quickly repeated "chuck, chuck, chuck," of alarm. Found the "castings" of many kestrels, which were composed chiefly of the fur and bones of mice, together with the elytra of the dung-beetle, and those of a large species of *Carabus* of a bronze colour and punctured.

Garganey, Raven, Cornish Chough and Peregrine Falcon.—April 13. A fine male garganey was killed close to the town of Plymouth; this species is seldom met with in our neighbourhood. Mr. Rogers, who deals in live birds, had two broods of young ravens sent to him from Cornwall, consisting altogether of nine birds, and he informed me that another brood was destroyed by boys with stones, and that he was promised a nest of young peregrines from the same locality. He has also had a pair of Cornish choughs for some years in his aviary, one of which has perfectly acquired the sweet call-note of a canary. A friend of mine, who has lately visited Tintagel, on the coast of Cornwall, tells me that

when there he was daily amused by watching the actions of a pair of ravens which had a nest in the cliffs, and that one of these birds became so familiar with his presence that it really seemed pleased with his company, and would actually fly to meet him every morning when he approached the place, alight within a few yards of his feet, eyeing him knowingly all the while, without exhibiting the slightest symptom of fear; that on one occasion, when coming round a sudden turn on the cliff, a long way from the place, happening to see his friend flying quickly by in quite another direction, he stopped and exclaimed, "Hulloa there! where are you going in such a hurry?" when the bird actually turned round and alighted on a wall close by his side, afterwards following him all the way to the spot on the top of the cliff just under which the nest was placed. By its extraordinary boldness my friend thought that the bird might have been once kept in confinement, but I have no doubt it was only to attract attention from its nest and young. Strange to say its mate would never approach within a hundred yards. He also said it was quite laughable to see how fond the bird seemed of alighting on the backs of the sheep, sometimes driving the whole flock "helter skelter" across the field. Jackdaws were exceedingly numerous in this locality, and on one occasion he observed the back of a donkey quite black with them.

Lesser Blackbacked Gull, Green Woodpecker and Montagu's Harrier.—Lesser blackbacked gulls seem to have entirely taken the place of the greater: observed fifty this morning on the "West Mud" and many flying about in the harbour at the same time, uttering an almost incessant cackling or laughing cry. Heard the blackcap and willow wren in full song at Antony, on the Cornish side of the river Tamar, and saw several green woodpeckers, one of which was hopping over the fields at a tremendous pace, every now and then suddenly stopping to thrust or stab its bill into the earth for a minute or so; but it really was quite surprising to see the speed at which it hopped along. In the evening my friend Mr. F. Brent, of Plymouth, kindly presented me with a magnificent adult male Montagu's harrier, which he had that day purchased from the warrener at Trowlesworthy, on Dartmoor; from the crop and stomach of which I took no less than fourteen lizards, of two species, nearly perfect and each full six inches long. The tails of many of them were off, but still lying perfect by the sides of the reptiles in the bird's stomach, and it is well known that the tails of

lizards are apt to drop or be cast off on the least touch. How quick the sight and action of this bird must be, for we are well aware of the agile movements of the lizard, which on the least appearance of danger generally vanishes in the twinkling of an eye. Immature Montagu's harriers are now and then obtained on our moors, but the fully adults are rarely seen.

Ring Ouzel, Lapwing, Curlew, Heron, Swallow and Common Sandpiper.—April 15. With a friend fishing on the Avon, as far as Huntingdon Warren, also on Dartmoor. Observed during the day several green woodpeckers, three common sandpipers, many ring ouzels, large flocks of lapwings, a heron, some curlews, which I am told breed in the neighbourhood, and one swallow, the first for the season; also came across the feathers of a ring dove, which had doubtless been killed by some large hawk.

April 19. Weather quite changed, wind N.E. and very cold, notwithstanding which I saw several swallows and sand martins, and heard many willow wrens, a few blackcaps, and the wood lark in full song.

April 21. Bitter weather, with snow. Blackbirds singing beautifully in our garden.

April 23. Wind S.W., blowing hard but warm. Birds again in full song. Heard the blackcap, willow wren, missel thrush and many others. Saw a fine common buzzard and raven, which I am sorry to say were killed in the neighbourhood of Plymouth a few days before.

Lesser Blackbacked Gull.—April 30. Lesser blackbacked gulls still very numerous. Counted sixty on a mud-bank in the harbour: indeed there is no other species to be seen here now, except the herring gulls, a few pairs of which breed in the neighbourhood; but I suppose the lesser blackbacks will be soon taking themselves off, as I know of no breeding-station for them in this locality.

J. GATCOMBE.

8, Lower Durnford Street, Stonehouse, Devon,
May 4, 1872.

Erratum.—There was an error in the third line at the beginning of my notes for February. Instead of "Observed several *flocks* flying round and dipping in the water full a quarter of a mile from the shore," it should have been "Observed several *rooks*."—J. G.

Ornithological Notes from Norfolk.

By HENRY STEVENSON, and J. H. GURNEY, Jun., Esqrs.

(Continued from Zool. S. S. 3048.)

APRIL.

Missel Thrush.—Missel thrushes' nests are unusually common, as might have been expected,—more so than blackbirds'. They are also low this year, as I have seen four (with eggs in) not more than four feet from the ground, and at Trimmingham there was one found on a bank. The common altitude seems to be about twelve feet, but they are occasionally far higher. The nestling is very different from a song thrush's,—the down being far whiter, and I observe that they are sometimes of different sizes, as if they were hatched on different days. On the 30th I found a nest containing a young bird which had evidently been hatched some hours, as it was dry, and three eggs. I happened to have in my pocket a dead missel thrush, which I had found caught in an unbaited post-trap, set for an owl. This I placed upon the nest, and retired to a distance to watch, while the parents flew about with many harsh screams: at length one of them returned and examined the usurper, first on one side and then on the other. I have not seen any chaffinch's nests in the same trees as missel thrushes' (see 'Birds of Europe,' part vi). They generally nest away from habitations about here.

Carriou Crow.—During the last few years this species has shown a desire to re-establish itself in several localities near Norwich. I saw an old bird, which had been shot at Hethersett on the 27th, and I learn that a nest was built this year at Earlham. Keswick is also a favourite spot.

Spring Migrants.—On the 5th of March Mr. Gunn saw a male redstart at Hellesdon, being about the earliest I ever heard of. The average arrival of the swallow was not before the 12th. The wryneck was heard on the 23rd of March at Sparham, by Mr. Norgate; on the 6th of April at Lynn, on the 7th at Earlham, on the 10th at Beeston and Keswick, and on the 12th at Hempstead. The earliest date obtained for the nightingale was the 9th of April, at Feltwell. Sand martin, April 13th, Hempstead. Blackcap, April 8th, Lynn; 11th, Keswick. I did not see one here before the 23rd, which, however, is earlier than it has arrived for five

years. Cuckoo, 17th, Attleborough; 22nd, Gimmingham, Keswick and Wotton.—*G.*

Woodcocks Nesting.—In the first week of this month two pairs of woodcocks were seen by Mrs. L. Stephens' gamekeeper, in the parish of Lynford, and one nest with four eggs was found. On the 7th two woodcocks were hanging for sale in the Norwich Market.

Spotted Rails.—Two nests of this species were mowed out at Walton Fen, near Westacre, on the 15th. One had eight eggs, the other three.

Blackbreasted Dipper (*Cinclus melanogaster*).—On the 20th Mr. R. W. Ketton showed me in the flesh a blackbreasted dipper, which he had shot on the wall at Fellbrigg pond on the 18th, a very late date for this county. The only other one which I know of as having been obtained in the immediate vicinity was caught in a drain at Beeston, in December, 1860, the country being under deep snow at the time.—*G.*

Pied Flycatcher.—On the 22nd I saw an early and beautiful male. I did not fetch a gun, but watched its habits. As it was tolerably tame, and never flew more than five yards, I was able to consider it attentively. It was upon a hedge in a ploughed field near the sea.—*G.*

Brambling.—On the 12th Mr. Gunn saw four bramblings at Beeston Regis. I have only seen one all the winter, and that was on the 24th of February. I am told that it is not usual to see them here after the autumn, save when they are exceptionally numerous.—*G.*

Blackbird.—On the 26th the keeper showed me a last year's blackbird's nest on the bare open ground.—*G.*

Teal.—April 26th. A female teal in the Norwich Market, probably shot from her nest.

Waterhen.—Four pairs which frequented the village pond have left.—*G.*

Woodcock.—On the 6th and 7th I saw woodcocks, and heard that they were seen at other places about the same time, preparatory to their departure.—*G.*

Wood Lark.—I received a pair from Feltwell, near Brandon, on the 10th, from Mr. Upcher.—*G.*

Nests.—A great number of nests have been deserted this spring, owing to the wet, to jays, squirrels and other ground vermin, and perhaps to my too constant inspection of them. In many cases

also—chiefly thrushes' and blackbirds'—I have been struck with the mysterious disappearance of some (but not all) of the eggs or young birds. Jays may be partly to blame, but I feel sure that in some instances they have been removed by the old birds themselves. Owing to these causes not more than one nest in twelve has come to maturity.—G.

Cromer Lighthouse.—On the 1st three starlings flew against the lighthouse, and one titlark; wind N.W., gloomy and misty. On the 6th a wheatear; wind N.N.E., overcast and gloomy. On the 7th a thrush; wind S.W. On the 27th four greater whitethroats.—G.

Heron.—On the 10th I found some of the young in the nests at the Earllham heronry, hatched. There are twenty-six nests this year.—G.

Lesser Redpole.—A pair seen on the 10th at Northrepps.—G.

Wood Pigeon.—On the 25th I saw a nest only four and a half feet from the ground. The eggs were slightly sat on; one of them had a soft end.—G.

Wren.—April 26th. Of all the nests I have found this year I have not seen one with eggs in.—G.

Asiatic Rhinoceroses. By E. BLYTH, Esq.

YOU state (Zool. S. S. 3060) that you are unaware that the lesser one-horned rhinoceros (*Rhinoceros sondaicus*) has ever been brought alive to Europe. Allow me to inform you, therefore, that a specimen of it existed for many years in this country, of which two figures from life are given in the volume on Pachydermata in Jardine's 'Naturalist's Library,' where it is supposed to be the sole Indian rhinoceros, so far as was then known, as distinguished from the one at that time and long subsequently imagined to be peculiar to the island of Java. A skeleton of probably the same individual (identified by myself as that of *R. sondaicus*) may be seen in the Museum of Guy's Hospital in Southwark.

The general resemblance between the two species of one-horned rhinoceros is so considerable that ordinary sportsmen do not distinguish them apart; but there are constant distinctions by which they may be readily discriminated at any age. The folds of the skin are much the same, with the exception that *R. sondaicus* has

invariably a very conspicuous fold crossing the base of the neck above, which does not cross the base of the neck in the other, and the polygonal facets of the skin are small and of uniform size throughout, instead of forming huge bosses on the fore-quarters and haunches, as seen in the superb pair of *R. indicus* (*R. unicornis*) now living in the Regent's Park.

The dimensions of these animals, as usually assigned by sportsmen, are those of the slain beast measured as it lay; the height being taken over the curve of the body, which adds a few inches to the real stature as the animal stood when alive. Thus the heights of the two species are generally given as respectively six feet and five feet at the shoulder, which must be understood to signify five and a half feet and four and a half feet, or thereabouts. If with a fairly-developed horn the lower of these heights is assigned, we may infer the particular species to be *R. sondaicus*, which in size is about midway intermediate between *R. indicus* and *R. sumatranus*. Dr. Horsfield indeed states that the Javanese individual figured and described by him subsequently attained to the height of five feet seven inches, which I cannot but regard as a mistake for four feet seven inches. A rhinoceros killed on the Garrow Hills is described to have a height of four feet five inches.* "It proved to be a male, with a pretty large horn, and was a very powerful animal;" whilst other rhinoceroses killed in the same tract of territory are described as exceeding six feet in height, indicative of the great *R. indicus*.

In Williamson's 'Oriental Field Sports' (published in 1807), the author fails, as usual, to discriminate the two species apart. His only figure (not a good one) is that of a young *R. indicus*; but he states that "It is very rarely that the rhinoceros has been found equal to six feet in height" (*i. e.* *R. indicus*); "he is ordinarily not more than four and a half to five feet" (*i. e.* *R. sondaicus*). I judge that the latter is the only one which he knew of as a wild animal, while his figure was probably taken from a young example of the large species that had been brought down from beyond the area of his personal observations, as they are not unfrequently brought down the Bráhmáputra from Assam at the present day. Sixty-five or more years ago, Capt. Williamson remarked that "the rhinoceros is seldom to be found on the western side of the

* 'Bengal Sporting Magazine,' 1837, p. 276.

Ganges, though the jungles there are fully competent to bear abundant shelter; nor, indeed," he adds, "has an elephant ever been seen in its wild state but to the eastward, and far distant from the banks of that noble river."

The geographic range of the great one-horned species appears to be very limited, it being chiefly confined to the base of the eastern Himalaya, but extending across the valley of Assam to the hills immediately on its southern border, where it co-exists with *R. sondaicus*, if not also with *R. sumatrans*. I was assured by an indigo-planter that he had seen in Lower Assam the dried head of a two-horned rhinoceros, which was there considered an exceedingly great rarity.

The one-horned rhinoceros of the Sundarbáns of Lower Bengal is *R. sondaicus* and not *R. indicus*. There is a skeleton of the former in the Calcutta Government Museum, being that of an individual which was killed in the Jessore district; and the skull of a Sundarbán specimen was (if it be not still) in the possession of Mr. Arthur Grote, late of the Bengal C.S., which was obtained about 1860, and is indubitably that of *R. sondaicus*, as compared with other skulls of the same species received from the Tenasserim provinces and from Java. Upon showing a fine series of skulls of the two one-horned species to a gentleman who had killed as many as nine rhinoceroses in the southern half of the Malayan peninsula, he had no hesitation in identifying the only kind with which he had long been familiar as the *R. sondaicus*.

The *R. indicus* is particularly numerous in the valley of Assam, from which province young examples are not unfrequently brought to Calcutta for sale, and are thence exported to Europe and America. The other one-horned species, though inhabiting so much nearer, is hardly ever brought for sale to Calcutta. The example of it formerly exhibited in this country (as already mentioned) was "a male, and was brought from Bengal, having been for some time kept in the gardens of the Governor-General in Calcutta" (*i. e.* in Barrackpore Park). "He has been sixteen months in Britain," it is added, "during which time he has visited London, Glasgow and Edinburgh, and is at present" (*circa* 1835) "the property of the proprietors of the Zoological Garden at Liverpool. It is stated to be six years' old, and to weigh two tons; is a beautiful specimen, and appears to be in the highest state of health. Height, from the highest part of the back, four feet eight inches." For further

details the reader is referred to the volume of the 'Naturalist's Library.' I should estimate the weight of the male *R. indicus* in the London Zoological Gardens to be somewhat about three tons and a half.

Dr. Jerdon remarks (in his 'Mammals of India') that *R. sondaicus* "is found at present in the Bengal Sunderbáns, and a very few individuals are stated to occur in the forest tract along the Máhánuddee river, and extending northwards towards Midnapore; also on the northern edge of the Rájmahál Hills near the Ganges. Several have been killed quite recently," he adds, "within a few miles of Calcutta." In the early part of the sixteenth century of our era, Báber (great-grandson of Timor Lang, or Tamerlane, and founder of the dynasty of the Great Mogul, which we have seen extinguished in our own time) mentions incidentally the occurrence of the rhinoceros, the wild buffalo and the lion in the neighbourhood of Benáres, and wild elephants in the vicinity of Chunar. In his notice of the animals peculiar to Hindustân, the royal author remarks:—"The rhinoceros is another. This also is a huge animal.

* * * It has a single horn over its nose upwards of a span in length; but I never saw one of two spans. * * * Its hide is very thick. If it be shot at with a powerful bow, drawn up to the arm's pit with much force, the arrow enters only three or four fingers' breadth! They say, however, that there are parts of his skin that may be pierced, and the arrows enter deep. * * * There are numbers of them in the jungles of Pesháwur and Hushungur, as well as by the rivers Sind and Behrah, in the jungles. In Hindustân, too, they abound on the banks of the river Sirwâ. In the course of my expeditions into Hindustân, in the jungles of Pesháwur and Hushungur, I have frequently killed the rhinoceros. It strikes very powerfully with its horn, with which in the course of these hunts many men and many horses were gored."

Slight as is the description given by Báber, it nevertheless tolerably suffices to indicate *R. sondaicus* rather than *R. indicus*. The nasal horn of the latter species commonly attains to two spans in length, whereas one span (say nine inches) would be a large size for that of the other. Next, it is very doubtful if the hide of *R. indicus* could be pierced with an arrow as described, although that of *R. sondaicus* might be; and then we have the fact of the latter animal still lingering on the banks of the Máhánuddee, presuming it to be there correctly identified, of which there can be

little, if any, doubt. The discovery of remains in some contemporaneous deposit will probably decide the question sooner or later.

Although there is no probability of the speedy extirpation of the *R. indicus* from such a country as Assam, a writer in the 'Oriental Sporting Magazine' (for October, 1868, p. 638) remarks that the rhinoceros-shooting in the Bhotan *dooars* "cannot last much longer. I am credibly informed," he adds, "that the *palwars* or *shikâris* had killed no fewer than two hundred rhinoceroses in the Gomar *dooar* this year. Say fifty were killed only, and I think it will be understood that [sort of] game will soon be exterminated, as the rhinoceros throws but one calf, which takes many years to come to maturity."

Both *R. sondaicus* and *R. sumatranus* appear to be extensively diffused in the Indo-Chinese and Malayan peninsulas, though not usually inhabiting the same districts; and the latter is probably that stated by Du Halde to inhabit the Chinese province of Quang-si, in lat. 15° N. In the island of Java there is only the *R. sondaicus*, and in those of Sumatra and Borneo only *R. sumatranus*, so far as at present satisfactorily ascertained; but there is reason to suspect that *R. sondaicus* likewise inhabits both of these islands. The Malayan tapir does so, but not Java, and the *Bos sondaicus* all three of the great islands, as I have been assured by Prof. H. Schlegel, of Leyden, who is my authority for the assertion that *Rhinoceros sumatranus* inhabits Borneo. In the Tenesserim provinces the range of the Malayan tapir reaches to 15° N. lat. *Bos gaurus* accompanies *B. sondaicus* to the Straits of Singapore, but not into any of the islands; while *B. frontalis* does not appear to inhabit, in its wild state, so far southward as Orakan. Eastward of the mountains which separate Orakan from Pegu it is not unlikely that *B. sondaicus* accompanies *B. gaurus* to reach at least the confines of the habitat of *B. frontalis*, as its range extends certainly northwards into the Shân states; but how much further to the eastward either *B. sondaicus* or *B. frontalis* extends we have yet to learn. Both *Rhinoceros sondaicus* and *R. sumatranus*, with *Tapirus malayanus*, would appear to inhabit Siam and Cambodia, and the tapir to extend also into Southern China.

E. BLYTH.

Are Guernsey Birds British?—The above question (Zool. S. S. 3066) is really not a *naturalist's* but a *collector's* question: it has, I believe, been raised before, both by entomologists and botanists; the former do not, as far as I am aware, include the Channel Islands insects in their British cabinets, but the latter do, I am told, include the plants of those islands in their British Herbaria. Without wishing to be thought to attach more than the very slightest importance to the British collector's question, it seems to me that there must be first an agreement as to a definition of "British," and then your correspondent's query may be easily answered. "British" may mean, found in a state of nature, *first*, in the British Empire, or, *secondly*, merely in Great Britain and Ireland, with their adjacent islets. No collectors that I ever heard of use the word in the first of these meanings; and if the latter is the one meant, then it only remains to ask whether, *geographically*, the Channel Islands are part of England. It appears to me that there can hardly be two opinions on this—*i. e.* that these islands belong geographically to the mainland on the French side. The idea mentioned by your correspondent, of a line extending to a certain and equal distance round Great Britain beyond which the productions are not "British," is quite new to me. Of course the question whether a bird or an insect, or what not, is British, has a considerable amount of legitimate and scientific interest, but the extreme to which "collectors" have carried it has done great mischief to the pursuit of Natural History generally. What can be more absurd, from a scientific point of view, than that a bird, for instance, which, on account of its abundance on the southern side of the Channel, might be procured there for sixpence, should command some fabulous sum when found on the northern side, and merely because of its *rare occurrence* there? This fictitious value leads to—in fact, it bids for—the grossest deceit and imposition on the part of the dealers and collectors for sale; but while the "British collector" with a well-filled purse exists, I fear that the question "What is British?" will always assume an importance not really belonging to it; still it would be well if the "scientific" in all branches of Natural History were to agree upon *one* rule in respect to its geographical aspect: we might then leave the "British collector" to be "stamped out" by the progress of knowledge and the increasing facilities for foreign travel. — O. Pickard-Cambridge; *Bloxworth Rectory, Blandford, May 2, 1872.*

A Visit to the Freshwater Cliffs.—Hearing that a great number of sea-fowl were breeding on the Freshwater Cliffs, and being in the Isle of Wight, I determined to go and have a look at them. The first day it was too rough to venture, but next day, being my last chance, and the sea rather calmer, I took a boat, a stiff breeze still blowing and a ground swell going on at the same time; however, after leaving the bay it was much calmer. The cliffs from Freshwater to the Needles extend for about two miles, and

range from fifty to seven hundred feet in height; they are of chalk, and nearly perpendicular in many places, rendering it very difficult and dangerous to procure any eggs, except by putting a bar down, a practice which has been stopped by the Lord of the Manor. At first we saw nothing except some jackdaws, which breed here in large numbers, laying their eggs in the crevices of the rocks, and are very destructive to both eggs and young of the other birds. We had gone about a mile before we saw the first cormorant, which rose from the water about a hundred yards ahead, and, flying round the boat in a half-circle, dropped about two hundred yards astern. Soon after this we began to see the herring gulls, which breed here in large numbers; some were sitting on pieces of rock close to the water's edge, some on the sides of the cliff, and others flying overhead, many of them allowing the boat to go by without appearing the least alarmed. As we proceeded we found them in greater numbers, and in passing the highest part of the cliff, which rises to nearly seven hundred feet out of the sea, a pair of puffins flew from a hole in the rock: it was on the top of this rock that Mr. Rogers, naturalist, of Freshwater, shot a pair of rock thrushes (these are two of the few British specimens killed up to the present time). All along the cliff we noticed a good many rock pipits. A little further on and we came to what seemed the favourite resort of the birds, which were to be seen on every available ledge of the rocks, besides many others flying about. The cormorants occupied the highest part of the cliff, and as near as we could guess there seemed about one hundred of them: some of these flew off and hovered over our heads, far out of gun-shot, whilst others looked down with wondering eyes. About the centre of the cliffs sat the guillemots, looking like rows of soldiers: these were in great numbers; many darted down, and with quick, steady flight passed over the boat out to sea; some flew back after a few circles and joined their companions, the greater number, however, taking no notice whatever of us. There were a few razorbills, and a good many puffins mingled with the other birds, the latter coming out of holes towards the base of the cliff. A little further on and we came to a large piece of rock in the water, off which flew nine cormorants; these soon mixed with the other birds, mingling their hoarse croaks with the harsh notes of the gulls, and then flew up and settled on the highest parts of the rocks. About half way up the face of the cliff we noticed a large bird sitting by itself, and on looking through the glass found it to be the crested or green cormorant, a rare bird in these parts. The men who rowed the boat said they never remembered seeing so great a number of birds there. The herring gull appeared to be the only one of its species breeding on these rocks, but the boatmen told us that a few pair of lesser blackbacked gulls every season remained to breed. Every winter these cliffs are frequented by many different kinds of the sea gull, and great numbers of geese and ducks are to be found on the sea. Every year a pair of peregrines and ravens build

their nests on these cliffs, but their eggs are always taken; the ravens this year laid five eggs, one of which I have secured for my collection. Many kestrels breed here as well. The hoopoe seems particularly partial to the Isle of Wight, four having been seen near Freshwater this spring.—*J. Whitaker, jun.; Rainworth Cottage, Notts.*

Arrival of Spring Birds.—April 20.—Redstart, at Ramsdale; cuckoo, at Goodwood Park. 21.—Blackcap and whitethroat, at Ramsdale. 23.—Whinchat, at Ventnor. 27.—Corn crake, at Salisbury. 29.—House martin, at Salisbury. May 3.—Turtle dove, in Bedfordshire. 5.—Swift and common sandpiper, at Rainworth, Notts. We have found a teal's nest with four eggs in some heather near here.—*Id.*

Tengmalm's Owl, Roughlegged and Common Buzzards and Dotterel in Shropshire.—It will, no doubt, interest many of the readers of the 'Zoologist' to learn that a very fair specimen of that rare owl, *Noctua Tengmalmi*, was killed on the 23rd of last March, at Ruyton-of-the-Eleven Towns, in this county, on the estate of Mr. Rowland Hunt, of Boreatton Park: it was obtained by a man shooting wood pigeons. The bird flew round the tree under which he was standing, and not knowing what it was he shot it. It has been preserved by Henry Shaw, of Shrewsbury, for Mr. Hunt. I examined the bird, which was a male, and found no traces of captivity about it. The primaries and tail-feathers were clean and perfect, but the breast-feathers on one side appear to have had the ends bitten off by the bird in a very singular manner. The plumage and markings were of an average character, but exhibited a dusky, or rather "smoky," appearance, as if the bird had been living in holes of trees. I am not aware of any previous specimen having been killed in Shropshire. In the first week of December, 1871, a fine specimen of the roughlegged buzzard (*Buteo lagopus*) was killed in Withyford Wood. Like many a rare bird it was only just rescued in time from a boy, who was dangling it along to hang up and "frighten the crows," by a gentleman who met him and knew its value. The common buzzard (*Buteo vulgaris*), a bird for some years past nearly extinct in this county, has again reappeared in several instances. I have a fine male and female, probably birds of the year, trapped upon Stowe Hill, and I have heard of others being seen and destroyed. The dotterel, a very rare bird in these parts, has been obtained once in the last year at Lutwyche Hall.—*John Rocke; Clungunford House, Shropshire, April 24, 1872.*

White's Thrush.—Allow me to inquire of Mr. Selater whether he has noticed the comparative length of the middle toe and tarsus of White's thrush with that of the missel thrush—that in White's thrush the middle toe is longer than the tarsus, and the reverse the case as regards the missel thrush. This measurement was taken some years ago from a specimen of White's thrush in the museum of the Zoological Society.—*Henry Robert Leach; Oak Hill, Hampstead, N.W., May 1, 1872.*

Hoopoe in Devonshire.—Returning home through the fields last evening, I was attracted by the strange flight and cry of a bird which rose out of a hedge near the path. The bird had apparently a very large head, out of all proportion to its body, and flew with an unusual dipping flight, uttering a shrill cry of three or four notes at each dip. I was not near enough to see the colour of the plumage clearly, but it seemed to be varied and rich. Immediately after I lost sight of it, a second bird of the same kind started out of the furzy bank within two or three yards of me, and passed close by me, so that I was able to see it distinctly. It was a hoopoe, and gorgeous and beautiful he looked as he sped along in the light of the setting sun, erecting his golden crest. It was the crest, of course, which had made the head of the flying bird seem so disproportionately large. Our visitors are evidently a pair, and it will be interesting to observe their habits if they build here. I was fortunate in obtaining a near view.—*F. C. Hingeston-Randolph; Ringmore Rectory, Ivybridge, April 11, 1872.*—‘*Western Morning News.*’

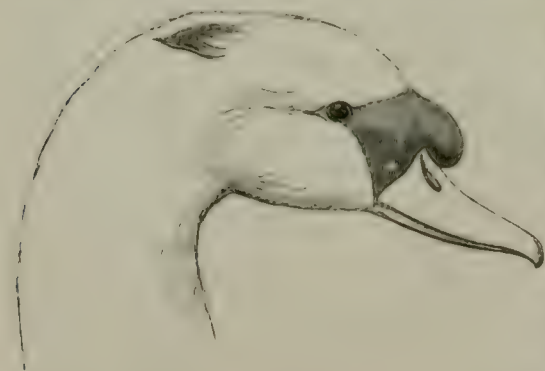
Hoopoe in Hampshire.—An adult female hoopoe, which I shortly afterwards saw at the birdstuffer's in Christchurch, was killed on the 13th of April, at Branksea Isle, Poole Harbour.—*A. von Hügel; Bournemouth, Hants, April 19, 1872.*

Starling's Nest built on a Wood Pigeon's.—On the 11th instant I found a starling's nest with five eggs placed in an old wood pigeon's nest, which was in a spruce fir. The starling's nest was open at the top, and made almost entirely of straw. Have you ever known such a situation for a starling's nest? — *B. N. Rake; Oliver's Mount School, Scarborough, May 21, 1872.*

The Landrail.—My brother heard the landrail near Harrow on Sunday, the 28th of April, 1872.—*H. R. Leach.*

Singular Mark on the Head of a Tame Swan.—I have sent you a sketch, made by my friend Mr. H. R. Robertson, of some markings observed on the

head of a male (mute) swan in December, 1870. These markings stand out like the horns of the eared grebe: they were about two inches in length, symmetrical on both sides of the head, forming the letter **V**, and bright red in colour. At first I took very little notice of them, thinking that they were produced by some injury, but from their



persistence I was induced to catch the bird and examine it more closely, when I found, to my surprise, that these horns were due to feathers of a

pinkish tinge. The horns lasted the whole of the spring and summer, the pinkish colour gradually becoming more and more faint, and finally disappearing about July. This winter I noticed them again, but they were not so distinct or persistent. I can find no mention of horns occurring in the swan in either Yarrell or Morris. Can any of your readers give an explanation of these markings, and if so, whether they are of frequent occurrence?—*A. H. Smee; May 13, 1872.*

Coluber Austriacus in Dorsetshire.—In the course of a heath ramble this afternoon I captured a fine and well-marked example of *Coluber austriacus*: the rarity of this snake seems to make its occurrence here worth mentioning. The present example is only the second that I have ever seen on our extensive tract of heath, although I have had an open eye for it in all my heath “collecting” expeditions ever since it was first recorded as a British species, and more especially so inasmuch as I have always felt interested in it, having been in company with Mr. Frederick Bond when, on the 22nd of June, 1854, he captured the first authenticated (though not then recorded) British example on the old “*Eulepia cribrum*” ground, near Ringwood. In the “*Collected Observations on British Reptiles*” (Zool. 1869, p. 1656) it is stated that “many other specimens” were captured, and recorded in the ‘*Zoologist*,’ besides those specially noted in the “*Observations*” (*viz.*, the one taken by the Hon. Arthur Russell at Bournemouth, that one alluded to above taken by Mr. Bond, and two examples recorded by Dr. H. P. Blackmore, also found at Bournemouth), but I have been unable to find the records of the “many other specimens mentioned.” I can only find (through the index) one recorded in the ‘*Zoologist*’ (Zool. 8928). I allude to this merely to raise the question as to the rarity, in England, of this snake. The heath district here is continuous with that of Bournemouth, which is fourteen miles distant; Ringwood is about the same distance from hence, but further inland, and also continuous with the heaths of Bournemouth: unless it were an exceedingly rare species I should hardly have met with it so seldom as twice only during many years’ frequent entomological rambles. About the year 1862, a friend of mine was residing at Bournemouth, and being curious in respect to reptiles,—especially snakes and adders—he searched the heaths there continually for them; the results were a collection, preserved in spirits of wine, of upwards of sixty adders and some snakes, but not the *Coluber Austriacus* that I heard of. The length of the example now recorded is twenty-one and a half inches. It was lying extended at full length on a bare hillock in a very heathy spot: directly it became aware of my presence it came quickly towards me, head erect and tongue rapidly moving in and out, and altogether looking very defiant, but I heard no hissing. If it had not been for an unconquerable

aversion to the touch of a reptile, I should have tried to capture it alive: as it was, a slight blow of my stick, more by good luck than good aim, caught it in some very vulnerable part, for it never moved, more than the tail, afterwards, while not the slightest trace of the blow remained visible in any part.—*O. P.-Cambridge; April 29, 1872.*

Sturgeon in the Torridge.—One of these fish, six feet six inches in length and weighing one hundred and sixty pounds, was caught in the Bridge Pool, Bideford, in a salmon-net yesterday. It was cut up and sold about the town at sixpence per pound. Sturgeons have been caught in this pool before.—*Gervase F. Mathew; Admiralty House, Devonport, May 18, 1872.*

Proceedings of the Entomological Society.

April 1, 1872.—Prof. J. O. WESTWOOD, M.A., F.L.S., President, in the chair. Dr. A. S. Packard, jun., of Salem, U. S. A., was present as a Visitor.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—‘Proceedings of the Royal Society,’ No. 132; presented by the Society. ‘The Entomologist’s Monthly Magazine,’ for April; by the Editors. ‘Lepidoptera Exotica,’ part 12; by E. W. Janson. ‘The Journal of the Quekett Microscopical Club,’ No. 18; by the Club.

Exhibitions, &c.

Prof. Westwood exhibited a large woody gall found at the foot of a young oak tree, from which the gall-flies were then escaping (Mr. Albert Müller considered it to be the work of *Cynips Q-radialis*). He also exhibited drawings made under the microscope, from microscopic slides prepared by Mr. Whitmarsh, of Wilton, near Salisbury, of various species of *Cynipidæ* mounted in Canada balsam. Among these were both sexes of the species forming the artichoke-gall of the oak; the males with fifteen, and the females with fourteen, joints to the antennæ. The female of the hard globular gall at the tips of oak-shoots had thirteen joints to the antennæ; the hind wing, close to the pterostigmatal region, was furnished with four long slender hooks, bent at right angles in the middle, connecting the wings during flight; the ovipositor and its two spicula were long, curved, and very slender; the terminal ventral segment of the abdomen in this, and in other species of the family, is produced into two compressed lobes at its apex, between which the tips of the ovipositor and its sheaths are placed.

The structure of these lobes, as exhibited in the drawings, presented various modifications not hitherto noticed or described, and which Prof. Westwood was of opinion would be of much service in specific determination in the group. He further exhibited similar preparations of various species of fleas. The antennæ of both sexes of *Pulex vespertilionis*, those of a female flea from the nest of a *Parus*, &c., were beautifully serrated. The head of a cat's flea showed a series of very strong bent spines on either side of the mouth-organs. The genital organs of a male of *Pulex irritans* showed a very complicated structure, the spermatie vessels being extremely long and convoluted. Finally, he exhibited drawings of a species of *Coccophagus*, a genus of minute parasites of the family Chalcididæ, which attacks the *Coccus* found on the rind of oranges; the male, just hatched, had been sent to him on the preceding day by J. W. Gooch, Esq., of Eton, accompanied by the following letter:—"Some time since I sent you a sketch of an insect I had frequently seen in the interior of the *Coccus* of the orange. This you kindly told me pertained to your genus *Coccophagus*. The other morning, when watching the movements of the insect *in situ*, I saw it commence to eat a hole through the skin and covering of the *Coccus*, and gradually work its body free. As you asked me for a specimen of the perfect insect, I send you one, which I have obtained after five years' search. It seems the most beautiful object I think I ever saw. I have now had it for four days in the accompanying glass cell, and find the best method of illuminating it for microscopic examination is by means of the parabolic condenser, or spot-lens, and then, under a half-inch power, it certainly strikes me as most exquisite."

Mr. Jenner Weir was glad to find the microscope being now so much brought to the aid of entomological investigation, and remarked on the uncertainty attending the description of the objectives used, inasmuch as the same nominal powers varied immensely in results according to the makers of the glasses.

Papers read, &c.

Mr. Albert Müller read the following notes concerning the habits of *Anaspis maculata*, *Fourc.*:—

"A short time ago Mr. George Norman kindly sent to me, at my request, some large, woody, tumour-like excrescences on birch, from Forres, because I had a notion they might be caused by insect-agency. I am none the wiser as regards their origin even now, but having taken the precaution of consigning them to a separate glass jar, an unexpected little scrap of beetle history has turned up. On the 28th of February last I noticed that a whitish, cylindrical, thirteen-jointed, coleopterous larva, six millimètres in length, had dropped from one of these excrescences.

"Turning over the plates of Chapuis et Candèze's '*Catalogue des larves des Coléoptères*,' I met with its counterpart on plate vii., fig. 5, copied as

being that of *Anaspis maculata*, *Fourc.*, from a paper by Perris in the 'Ann. de la Soc. Ent. de France,' t. v. 2me Sér., 1847, pl. 1. Not having at that moment the 'Annales' to refer to, and the 'Catalogue' only affording the reference *pur et simple*, I jotted down a description and then left the larva alone. Six days later it had turned to a sculptured pupa four millimètres in length, of a dirty white colour, with the head bent forward on the chest, extremely short semi-detached wing-cases, and a pointed hind-body, from which the cast larval skin was dangling. Breathed upon once it manifested its sense of the annoyance by a series of vigorous tail-lashings to and fro. It then appeared that its hind-body was fringed with detached white silky bristles, and that a few such were also scattered over the other parts of its body. On the morning of the 17th of March I found the empty pupa-skin shrivelled up, and at a short distance the beetle crouching against the rim of the glass in the characteristic sneaking fashion of the *Mordellonæ*. It proved to be *Anaspis maculata*, *Fourc.*, as expected. Having since referred to Perris's paper, I find he has given such ample details of the larval state that I deem it useless to reproduce my description, as it tallies in every particular. Perris mentions that the larvæ, pupæ and imagines are found in France in irregular worm-eaten galleries of dead shoots of the wild and cultivated grape vine. At this season of the year the insect, as is well known, is common on all sorts of shrubs and herbs in blossom, particularly on thorns, and it is very likely that the female deposits her eggs indifferently in all sorts of ligneous plants."

Mr. Butler read "Translations of descriptions of certain *Pericopides* omitted in a list of species recently read before this Society."

Mr. McLachlan read a paper "On the external sexual apparatus of the male of the genus *Acentropus*," supplementing the memoir on the genus by Mr. Dunning, read at the meeting on the 4th of March. He detailed the structure of this apparatus as observed under a $\frac{3}{8}$ -inch objective, with the compound microscope, and exhibited drawings illustrating his remarks. After cursorily alluding to the question of the ordinal position of the genus, and observing that those entomologists who doubted its Lepidopterous nature could not have studied the structure of the insect, or else maintained an affected opposition, he entered into the subject with regard to the presumed existence of more than one species, and stated that, although minute differences existed in the genital organs of individuals from various parts of England and the Continent, he saw nothing to convince him of the multiplicity of species some entomologists admit. Nevertheless he reserved an opinion on the specific value of the great discrepancy in the alar development of the females, over which there hung a certain amount of mystery, and on the obvious fact that the males, from different localities, also varied in the contour of the fore wings.—*R. M'L.*

Notices of New Books.

On the Genus Acentropus. By J. W. DUNNING, M.A., F.L.S.

MR. DUNNING, an excellent entomologist, and until lately the *super*-excellent Secretary of our Entomological Society, honoured and beloved by all its members, in this able dissertation, reverses the order of sequence formerly adopted by entomologists when they “detected a hitherto unnoticed character” in the hind leg of a beetle. On such occasions, our entomological Dryasdusts almost invariably began with a general sketch of their views of creation; reviewed the history of Adam, Cain, Enos and the patriarchs; then descended to Aristotle, Pliny, Cuvier, Savigny; were “astonished” that so important a character had escaped the notice of all previous *savans*; and finally travelled through Kingdoms, Provinces, Classes, Orders, Families, Genera and Species, until they arrived at this identical *Scarabæus vulgaris*, whose unfortunate leg had perhaps been broken or bruised by some greedy sparrow in his parental anxiety to convey a meal to his expectant family; and who was then to become the type of a new species, genus or family, and simultaneously the fountain whence reams of paper would be flooded with ink, until the thirst for “natural selection,” “protective differences,” and “parthenogamic evolution,” was wearied out, if not exhausted. Mr. Dunning dispenses, and, as I think, wisely with all this; and commences thus:—

“I have to announce the capture of *Acentropus* almost in the heart of London, about a furlong from the Regent’s Park canal. Between nine and ten o’clock one evening, in the latter half of July, 1871, an insect attracted my attention, chiefly by the peculiarity of its flight round the lamp near which I was sitting; in colour and general appearance it was insignificant enough, and might have been a small *Crambus*; but it had not the weak and vacillating motion of a *Crambus*, for it flew with decision and in circles, or rather semi-circles, alighting constantly on the table for a moment, then flitting off to perform another round. When it sat for an instant, the horizontal and deltoid pose of the wings, and an indescribable sprawl of the legs, reminded me of *Hydrocampa*. I had not recognized the insect as *Acentropus*, and it was only on the following morning, when I had killed the specimen, that I found out what it really was. But the living insect was certainly to my eye a moth, and it produced upon my mind the impression of a *Cramboid Hydrocampa*.”

After this simple but quite sufficient announcement, Mr. Dunning recites the authors who have written of this particular *Acentropus niveus*, under whatever name. He begins with Olivier, and canters gently through a whole regiment of the learned,—Stephens, Curtis, Westwood, Stephens a second time, Westwood a second time, Boitard, Brown, Scott, Brown a second time, Zeller, Speyer, Millière, and Newman; the last-named alone he honours with the epithet of his “friend”; in fact, to use a simile of Chateaubriand, Newman is “the worm with which he baits his hook”; he bestows on Newman frequent and highly appreciative notice, that does infinite credit to his head and heart: to his head, because it displays reasoning powers of the highest order; to his heart, because a strain of playful banter pervades the dissertation wherever the name of his “friend” occurs: he follows the advice of the humane Walton to the student who is receiving instructions for adjusting the living worm on the hook, “Handle your worm as though you loved him.” There is none of that sour-kROUT phraseology, which now, alas! so frequently defiles entomological writing, and disgusts those who are beginning to study the science. Mr. Dunning uniformly treats his “friend” with courtesy and kindness, although always, it must be admitted, with proper firmness: he gives his “friend” no chance of escape; writhe and wriggle as he may, the barbed hook still holds. *Hærit lateri uncus lethalis*.

“But in 1872, Newman returns to the subject, and after informing us that ‘it is nothing more than a conventional idea, or sometimes a convenient assumption,’ that wing-scales are confined to Lepidoptera, he adds, that ‘the assumption is utilized now and then to set up some hobby, such for instance as the Lepidopterous nature of Acentria, which assumption remains standing only until some one of more extended or more careful powers of observation, or more skilled in logical deductions, knocks it down again’ (Entom. vi. 10).

“We all know that every periodical has a ‘some one’ who is necessarily, and *ex officio*, of more extended and more careful powers of observation, and more skilled in logical deductions, than any other one who presumes to differ from him. But making due allowance for the ‘conventional idea’ of the omniscience, and the ‘convenient assumption’ of the infallibility of editors in general (and speaking in all good-humour, and with every respect for my friend), I cannot characterize this sentence otherwise than as editorial ‘bounce.’ It was no part of my plan to have given the preceding sketch, but I have been led to do so by reading the remarks of the editor of the ‘Entomologist,’ which I have just quoted. Of course, Newman may

be right, and all the world wrong; and equally of course, if Newman is wrong, he is entitled to retain his own opinion; but at the risk of repeating a thrice-told tale, I have thought it worth while to show that, so far as published authority goes, there is an overwhelming preponderance of opinion against him, and that those who are against him have given very good reasons for their opinions. We are not told by whom the 'convenient assumption' has been made; and though doubtless the presence of the wing-scales has been alleged as one ground, and an important one, for regarding *Acentropus* as a moth, yet it is but one circumstance among many, and it seems to me inaccurate to say that any one has 'utilized the assumption to *set up* the hobby' in question, for no author has relied exclusively, or even mainly, on the presence of wing-scales, but everyone has placed far greater dependence on other (less popular and more technical) characters. The tippets and wing-bristle originally set up the hobby. The passage about extended and careful observation and skill in logical deduction, leads one to enquire—Can Newman, when he penned it, have read the papers of Speyer?

"Let me ask, what is to happen when the 'standing assumption' is 'knocked down again?' The assumption is, that wing-scales are confined to Lepidoptera. Let us get rid of that assumption (if anybody has made it), and let us assume the contrary, that wing-scales are not confined to Lepidoptera. From the premises (1), *Acentropus* has wing-scales, and (2), wing-scales are not confined to Lepidoptera, are we expected to draw the conclusion that *Acentropus* is not Lepidopterous? I am not 'skilled in logical deductions,' but it seems to me that when the assumed assumption has been knocked down again, the argument in favour of the Lepidopterous conclusion remains untouched.

"But probably it is not the 'assumption,' but the 'hobby' which is intended to be dealt pugilistically with. Let us, then, look for a moment at the arguments by which the 'hobby' has been hitherto 'knocked down.' Newman's reasons are given at p. 8216 of the 'Zoologist,' and appear to be four in number:—(1), 'scales far more like those of Lepidoptera occur on the elytra of a thousand beetles;' (2), the thoracic tippets do not 'obtain throughout' the Lepidoptera: (3), 'the wing-bristle 'tends as much to unite *Acentropus* with the Hymenoptera as with the Lepidoptera;' and (4), the characters in which the pupa of a moth differs from that of a *Phryganea* require to be more distinctly pointed out. Westwood has dealt with these grounds *seriatim* (Proc. Ent. Soc. 1862, p. 101); and, so far as I can discover, these are the only reasons which Newman has published for doubting that *Acentropus* is a moth. As suggesting points for further examination and explanation, the four propositions are harmless enough; but to suppose that the enunciation of them has 'knocked down the hobby,' or that, by the repetition of them, the hobby will be 'knocked down again,'

is surely a miscalculation of the strength of the arguments. I understand the question to be—‘Is *Acentropus* lepidopterous, or is it trichopterous?’ By the first proposition, the presence of wing-scales is admitted; it can scarcely be contended that their presence is an argument *against* the insect being lepidopterous, and it can hardly be intended to suggest that *Acentropus* is coleopterous; but unless such a suggestion is intended, the proposition is wide of the mark; there is no question about beetles, and to answer the inquiry ‘Lepidoptera or Trichoptera?’ by saying ‘It is like Coleoptera’ is no answer at all. Again, it can hardly be intended to suggest that *Acentropus* is hymenopterous; but unless such a suggestion is intended, the third proposition is only throwing dust in the eyes, and diverting attention from the real question, ‘moth or caddis-fly?’ But the second proposition is, perhaps, the most curious of all: from the premises, (1), *Acentropus* has tippets, and (2), some Lepidoptera have not tippets, it can scarcely be argued, much less ‘logically deduced,’ that *Acentropus* is not lepidopterous.

“Newman concludes (Zool. p. 8217) by indicating ‘the proper mode of proceeding in such a case as this,’ and finally asks for a ‘verdict solely on the evidence.’ I have only had an opportunity of examining the imago; but, bearing in mind that ‘its mouth, wing-rays, thorax and legs should have especial care bestowed on them,’ the result of my own examination has been to satisfy me that it is a moth. The earlier stages confirm this view; the eggs are not enclosed in a jelly-like substance, as is usual with Trichoptera; and the larva and pupa have nothing of the trichopterous type about them. The mouth and head of the larva of *Acentropus* are unlike any known caddis-worm; whilst the mummy-like pupa is totally different from the pupæ of Trichoptera, with their free legs and antennæ, and their strong mandibles, with which they gnaw their way out of their case. And though it is quite true that further details are required to give a complete ‘life-history of *Acentropus*,’ I have no hesitation in saying that, deciding on the evidence now forthcoming, the insect is a moth.”—P. 126.

Although he thus apparently settles the matter to his own entire satisfaction, Mr. Dunning seems to doubt whether the solution will be equally satisfactory to others; and so, as we shall presently see, returns to the subject under the head of life-history; having driven the nail home in the well-arranged paragraphs I have quoted, he attempts to clinch it by certain facts in life-history, to which process, Newman, who introduced this element into modern Entomology, cannot possibly object. Still a difficulty of no ordinary magnitude remains; having proved that *Acentropus* is a Lepidopteron, what position in that huge and unmanageable section of the Insect world

is it to take up. Mr. Dunning, after citing the conflicting opinions, —I will not again call them “crude guesses,” as the epithet seems to be displeasing,—summarises the whole of them, and gives his own view thus:—

“Thus we have a Tineine, a Pyralidine or Crambine, and a Bombycine view; and, of course, there is something to be said in favour of each. I believe it is not doubted that *Micropteryx* belongs to the Tineina, and, perhaps, of all moths, that genus is the most like the Trichoptera; it seems natural, therefore, that *Acentropus* and *Micropteryx* should not be placed far apart, though, in fact, their technical characters are considerably different. Whether Westwood considered *Acentropus* to connect the Tineina and Pterophorina, I do not know; it may be fancy on my part, but I do fancy I detect an affinity between *Acentropus* and *Agdistis*. The approximation to the Hyponomeutidæ does not appear to me so manifest; I suppose the recurved or drooping palpi are the principal thing relied on; but in Knaggs’s ‘Cabinet List’ the Hyponomeutidæ are the next family to the Micropterygidæ. Again, there is plausibility in the suggestion of relationship between the phryganoid *Acentropus* and *Chimabacche phryganella*; next to the Epigraphiidæ or *Chimabacchidæ*, the Psychidæ are also placed by those who regard that family as Tineina, and it scarcely needs to be added that the Psychidæ are very like Phryganeina in some respects, and have indeed, been classified with Neuroptera; moreover, the existence of wingless or but partially-winged females in *Acentropus*, is a feature which that genus possesses in common both with *Chimabacche* and *Psyche*. So far as I am aware, Brown is the only author who has referred the genus to the Bombycina; it is to this group that the Psychidæ are relegated by those who expel them from the Tineina, and Brown would place them in the same section of the Bombycina; but the families with which he suggests that *Acentropus* has the nearest affinity are the Hepialidæ and Zenzeridæ, agreeing with the former ‘in the general shape of its larvæ, in the absence of spines on the legs of the imago, and in the substitution for them of hair, in the want of a labrum, and in the almost total absence of maxillæ;’ and with the Zenzeridæ ‘in the shape of larva, small development of maxillæ, and general form of the palpi.’ On the other hand, the general appearance of the imago is strongly suggestive of a Crambus, but the retrorse palpi and the neuration of the wings do not agree with those of the Crambidæ; whilst the aquatic habit of the insect, the mode of life, and the metamorphoses, are so plainly indicative of affinity to *Hydrocampa*, that I willingly go with the current of recent opinion, and recognize the true place of the Acentropodidæ to be where Staudinger and Wocke have placed them, that is to say, in the Pyralidina, leading up to the Chilonidæ and Crambidæ.”—P. 131.

This passage is followed by what may be called "Contributions to the life-history of *Acentropus*," and most valuable contributions they will be found. Mr. Dunning borrows from all available sources, but more especially from an excellent essay on the genus by Mr. Brown, of Burton-on-Trent, published in the 'Natural History of Tutbury,' a work which I have already noticed in the 'Zoologist,' and which is really our highest authority on this branch of the subject. Mr. Dunning seems to adopt and to endorse Mr. Brown's views, and his facts also, but by no means to the exclusion of other sources of information. It is true that the statements are slightly discordant, but considered as a whole they cannot fail to interest his readers.

To begin with the eggs or supposed eggs. The first notice is by Messrs. Dale and Curtis; they were described, in the 'Proceedings of the Entomological Society,' as "a large mass of white and very elongated eggs." Dr. Hagen describes them as "a number of white roundish eggs, laid thickly together on a *Potamogeton* leaf." The conflict between the two descriptions I think sufficient to prove that the eggs described were scarcely those of a single species. Then, again, Herrich-Schæffer has figured a female *Acentropus* with a connected string of eggs adherent to the extremity of her abdomen, and Mr. Dunning informs us that Mr. M'Lachlan and Dr. Knaggs have specimens exhibiting a similar peculiarity. Mr. Dunning does not notice the tendency of this character to affine *Acentropus* with the Phryganidæ and to separate it from the Lepidoptera, but proceeds thus:—"The larva is of a light green colour, and like those of *Hydrocampa*, *Paraponyx* and *Cataclysta*, it lives on aquatic plants below the surface; it has gills and lives freely in the water." I think Mr. Dunning here makes no allusion to the similarity of the gills of the larva of *Acentropus* to those of the larvæ of *Hydropsyche atomaria*, figured in Westwood's 'Modern Classification,' fig. 68, 19, or perhaps I have overlooked the reference: if so I retract the observation. Brown, *op. cit.* p. 402, states of the larvæ that, "They possess every lepidopterous character and make no approach to the trichopterous type;" yet, notwithstanding this, we find, from his own account, that "They reside in silken cocoons, which are strengthened by small pieces of the leaves incorporated longitudinally in the fabric, and which are placed in the submerged axils of *Potamogeton perfoliatus* and *P. pectinatus*."

Thus, it seems from the observations of these two authors that these larvæ, living freely in the water, breathing by gills, and residing in cases like those of *Hydropsyche*, can scarcely be said to possess every lepidopterous character and make no approach to the trichopterous type. I arrange the statements thus in proof of my assertion that these contributions to the life-history of *Acentropus* are somewhat discordant. Mr. Brown says, "The pupæ are of the masked character, and the external case enables one to see clearly which will produce males and which females." I think this is very properly given as a fact without being intended to support a theory. Mr. Brown says that "When the imago emerges, it deliberately enters the water, and after creeping down a pond-weed stem for an inch or two, emerges again with unwetted wings." Mr. Hyndman, as quoted by Mr. Westwood, observed *Phryganea grandis* "creep down the stems of aquatic plants under the water, very nearly a foot deep, for the purpose of oviposition; on being disturbed it swam vigorously beneath the water to some other plants." Can we accept these statements in proof of the lepidopterous character of *Acentropus*? I wrote thus far rather with the intention of contrasting this statement with others leading in an opposite direction, but I think the subject is well left for the present where it is; whatever is unsound in itself will not long retain its influence; whatever is sound will live for ever. The grand exordium of the Attorney-General in the Tichborne trial convinced everyone who heard it, but the effect of that conviction is fading away now that his voice has ceased, although no reply has been attempted; the influence of all those epithets is already on the wane.

Mr. Dunning agrees with many other entomologists in thinking that we have but one species of *Acentropus*: his views on this are so interesting that I prefer giving them at length.

"To slight differences in colour and size, I attach no importance. Hagen mentions that the colouring of the male *Acentropus* is variable in Prussia, the fore wings being sometimes more and sometimes less flushed with brown (Stett. Ent. Zeit. 1859, p. 203), and he refers (*ib.* 1870, p. 316, n.) to specimens from Russia and East Prussia which had the wings marked with brown. Tengström (Not. Faun. Fenn. Förh. 1869, p. 324) says that Reuter captured specimens of *A. Nevæ* which in colouring resembled *latipennis*. And Ritsema (Tijd. voor Ent. 1871, p. 34, n.) reports that 'the colour varies between snow-white and gray.' I have not seen any

specimen which could be appropriately described as snow-white, but I do observe differences both in colour and size in our English insects. These differences, however, do not serve to distinguish *latipennis* (Hansonii) from *niveus* (Garnonsii), but are common to both forms; the English *latipennis* exhibits as great a range of variation, both in size and colour, as the English *niveus*; specimens from Cheshunt are precisely like those sent by Staudinger, and of the uniform dull tint depicted by Herrich-Schäffer, whilst others from Hampstead are of lighter hue and prettily mottled, or flushed with deeper brown. The important point is, undoubtedly, the broader rounder wing of *A. latipennis*, and although the winged females agree well with one another, from whatever locality they come, there certainly is a difference in the shape of the wings of the male, which is very perceptible when the narrowest and the broadest winged specimens are contrasted; and some of the Hampstead examples are larger insects, and have even broader wings than the Continental *latipennis*, differing in this respect as much from *latipennis* as the latter does from *niveus*. But other males captured at the same time and place, and specimens taken elsewhere consorting with amply-winged females, exhibit the narrower wing which is supposed to distinguish *niveus*; and, in fact, there is every gradation, the extremes may be connected by intermediate forms, and I do not think the breadth of wing can be depended upon as a test of their specific distinctness.

"If this be so, I submit that there is, after all, but one species of *Acentropus*; with a wide European range, and exhibiting perhaps slight modifications in different localities, but gradual modifications, the extreme forms being connected by intermediate links. Its geographical range extends from about 4° W. to 45° E. longitude, and from 48° to 61° N. latitude; even those who advocate the separation into several species admit that *A. Nevæ* ranges from the Gulf of Bothnia to the Bodensee, whilst *A. latipennis* occurs alike in England and South-Eastern Russia. And indeed with the exception of the isolated *Sarepta*, on the Volga, there is a continuity about the localities which favours the idea of the unity of the species; thus starting from St. Petersburg, we pass along the North coast of the Gulf of Finland, then along the Prussian Shore of the Baltic, and inland to Frankfort-on-the-Oder, then to Holland, England, France, and the southernmost parts of Baden or the northern confines of Switzerland. The insect is so insignificant in appearance that it may well be overlooked; if searched for, I have no doubt it would be found wherever a pond-weed grows."—P. 149.

In conclusion, I may state that, although I do not conscientiously believe Mr. Dunning has settled the place of *Acentropus* in either a natural or an artificial system, yet I *do* think, and I feel sure that all entomologists will agree with me, that he has produced one of

the very best and most powerful papers our Entomological Society has ever published, and one that will bring us credit both at home and abroad.

EDWARD NEWMAN.

A Discussion of the Law of Priority in Entomological Nomenclature. By W. ARNOLD LEWIS, F.L.S. London: Williams and Norgate. 1872.

THIS pamphlet of eighty-six closely-printed pages will inevitably attract the serious attention of entomologists, and must elicit the approbation of all who wish well to our science. My own opinion on the fashion of name-changing, which has raged like a virulent epidemic among ornithologists and entomologists, is, I am fully aware, in the highest degree unpopular. In both these *ologies*, the highest achievement of modern science is to exhume from a worm-eaten folio, slumbering in some unheard-of library, a name which shall be sure to attract attention either from its novelty or its uncouthness; and to apply the treasure thus discovered to a bird or a butterfly which we cannot fail to see in every summer walk. This triumphant folly comes to us as commended by the authority of the "British Association for the Advancement of Science," whose Committee on Nomenclature I believe to be entirely innocent of any such design: it may be that the Committee were unwise and hasty in dealing with their work; but I believe them totally innocent of the design which is imputed to them by their admirers. Still this version of the "Rules," though dating so lately as 1861, has become a fashion; and therefore, as an energetic and manly plea against a degrading and absurd fashion, which may very appropriately take its place with pigtails, beauty-spots and hoops, I cordially accept Mr. Lewis's 'Discussion' as a most timely publication. I can scarcely say that I believe it will be useful: whoever knew a woman relinquish a fashion at the dictation of wisdom! However foolish, fashion knows no remedy but a new fashion: here the homœopaths have the better of us; they apply the disease itself as a remedy, and until some new idea is started, such as spelling backwards, or ending the name with a capital letter, thus, we shall continue fast fettered by the existing laws of name-changing. No

mortal man was ever reasoned or preached out of a folly: very few have been laughed out of one; but there is ever a disposition to yield to a counter-folly.

This 'Discussion,' however, embodies another element, quite as objectionable as the utilitarian element is commendable; and wherefore Mr. Lewis introduced this objectionable element I cannot conjecture. As a matter of course, I allude to his sweeping condemnation of Mr. Doubleday's Synonymic Lists. It will seem strange to attribute ignorance to such a writer as Mr. Lewis, but he appears totally ignorant of the state of nomenclature when Mr. Doubleday wrote his first list. Such a list was a positive necessity: imagine a school, say of only a hundred boys, not one of whom had an accepted name, but was called Jack, Ned or Will at the option of the caller, and you will at once see the necessity of some system of nomenclature which should not be quite so primitive. Now when I commenced Entomology this was literally the case: we had only a few traditional names, dictated by Dr. Leach and published in Samouelle's 'Useful Compendium': Stephens revised these names, and, for some occult reason that has never transpired, altered the Jacks into Neds, or something of that kind; then followed Curtis, and altered the Neds into Wills, because Neds were Stephensian. Under this *régime*, the necessity for a list became obvious, not perhaps to Mr. Lewis, for it was prior to his acquaintance with Entomology or entomological discussion, but to all those who possessed collections. Having been ever since the year 1832 connected with the publication of entomological literature, I was not "surprised to hear" an appeal from all parts of the country to supply this necessity, and as we had then, and have now, but one macrolepidopterist competent to the task, no one was "surprised to hear" that I had applied to him for help. To that single macrolepidopterist all eyes were turned, all voices were in accord, and that man was one of my nearest and dearest friends. A distrust of his own abilities induced a long hesitation, and it was only to great pressure that Mr. Doubleday at last yielded: he yielded not because he wanted a list; not because he had any crotchet to air, any purpose to serve, any remuneration to receive, or advantage of any kind to gain; he yielded with the utmost reluctance solely to oblige one of his oldest friends. He writes on the eve of publication, "I would not have done this for any one else; I have done it entirely to oblige you." Let me now extract

one passage from the 'Discussion,' in which this subject is introduced by Mr. Lewis, and see what he says of this most accomplished of lepidopterists, living or dead,—of this most modest and retiring of men. If Mr. Lewis has published here or elsewhere any modified or qualified remarks on my friend and his 'Synonymic Lists,' I shall be most willing to reprint them; but I cannot take upon myself to criticise or comment on the long extract I now make from the 'Discussion.' It is sufficient to say that I totally dissent from the spirit and tone of the entire passage as applied to my friend.

"The mere wrongful supplanting of an old name by the new one of the obscure pretender is not a matter about which Science troubles itself at all. But the pretender of the other class which I have already mentioned, for whom the law of priority pushes wide the door, is a person whose influence is indeed to be dreaded, and the occupation by *him* of a conspicuous place among men of science is a misfortune, little short of a calamity. The person I refer to is the *List-maker*, or Catalogologist.

"The usual way in which old or re-discovered names are brought to the notice of naturalists is by the publication of corrected lists of species, in which the 'prior' names appear instead of the ones in use. These lists of names, publications of no intrinsic merit, and supplying absolutely no test of their author's worth, are, I say unhesitatingly, the publications which are in Entomology regarded as of most importance and are now most widely studied. The author of one of these publications is the person I mean by a list-maker.

"These lists, and their unnatural importance, furnish matter for grave consideration for those who have at heart the interests of science. Now, lists of names must observe some certain order; and the order of the names is also the order of *the species*. The list-maker, then, cannot publish his paltry work without at the same time trespassing on the great department of Classification. It is notorious that most important changes in classification are continually introduced by synonymic Lists, and these list-writers are actually pitch-forked into the position of founders of systems of arrangement! The one glaring instance of this in Entomology must be known to many present. A French author actually preferred, though himself a prolific book-writer, to give to the world his ideas on classification through the medium of a Synonymic List, intended for labelling collections, and published in London. That list, bought for labelling by a thousand collectors, spread far and wide the new order of arrangement of the Lepidoptera, and Mr. Doubleday, its author, as if by magic found himself the founder of a system, in defence of which neither he nor anyone else ever

penned an article. This List utterly subverted all existing or previous arrangements, and its history furnishes an only too significant proof that Entomology is at the mercy of list-makers. But, generally, the publication of a list of names, unaccompanied by reasons, furnishes an easy and tempting opportunity for airing a crotchet. Consequently, no man's list follows exactly the work of any one else; and it is scarcely straining language to say that there are as many systems of arrangement as there are lists of names! The changes in arrangement thus introduced may be, and have been exposed as being, unfounded, mistaken, happy-go-lucky changes. But changes so made are, it is only too true, made effectually, and endure."—P. 76.

I now turn back to passages which I can endorse most willingly, and which have my unqualified approbation; and first to the rule of "Priority" and its difficulties. Priority advocates agree on a principle, and, without exception, cripple that principle with limitations of their own invention. Mr. Lewis puts the case gently and pleasantly, and treats this branch of his subject with a courteous consideration that I scarcely think due to the "priority" advocates, not one of whom pretends to adopt the earliest name, but the *earliest name that agrees with some other law or rule which he has imposed on himself*. A naturalist or a lexicographer would define the word "Priority" as "the state of being first," and, as applied to dates, "precedence in time." Among entomologists it has no such meaning; we should all agree in ridiculing such a definition. Let us hear Mr. Lewis:—

"Now, we of this generation find a rule all cut and dried for us; and we agree no doubt that this rule is reasonable and efficacious. Moreover, it is the only rule which has been acted on for securing uniformity; and, independently of its merits, the principle has now received very extensive acceptance. Therefore, we are not put to invent a rule for ourselves, as we are fortunate enough to inherit a good one. But we of this generation make a discovery. We find that this rule is being applied in a manner to re-introduce the confusion which it was invented to dissipate. We find that names in use nowhere and entirely forgotten are brought up to supersede names universally agreed on; and we find that upon the new names themselves there is no sign or semblance of agreement between those who support their introduction. This is a new matter entirely. Our cut-and-dried rule will not serve us here; and it seems that we are called upon to invent something to meet the difficulty. This we are fully entitled, and indeed, if we are worth our salt, are *bound* in our turn to do.

“Let us shortly examine some of these difficulties, and the causes which have occasioned them. We shall soon be able to judge whether our old rule will be sufficient in time to overcome them; or whether it is not necessary for us to come forward and devise for ourselves some new expedient. For this purpose I propose to take note of the opinions of those who hold that the old rule will be sufficient to help us.

“In the first place it is necessary to remark that every resurrectionist author has his own particular views. There is no such thing as a complete agreement among them all, or even between any two of them. The partisans of absolute priority differ radically among themselves on both the two questions,—*when* our nomenclature is to be taken as beginning, and *what degree of identification* is to be required before a given name is accepted; or, in other words, they differ *in toto* as to the application of their principle. They likewise differ on the questions how to arrive at a name: when a species is described by the discoverer more than once; and in the case of names nonsensical or not properly constructed. I will touch very lightly on these several matters.

“First of all, then, the old-priority partisans differ completely as to when our nomenclature begins. The priority principle, they say, requires the acceptance of the earliest name; and it is, therefore, of the first importance to discover how far back your investigations are to go. A short examination into the position of affairs will be quite enough to satisfy entomologists that there is no reasonable hope of an agreement being arrived at on this head.

“There are, at present, at least four different dates, each of which is set up by different living entomologists as the date when scientific nomenclature began:—

“1735. Mr. Crotch (for genera).

“1751. Dr. Thorell.

“1758. Staudinger and Wocke; Gemminger and Von Harold.

“1767. Mr. Kirby (Catalogue): British Association.

“In addition, Mr. W. F. Kirby has shown that specific names were first given in 1746; so that this new date must be added to the list of those claimed as the commencement of our nomenclature. Some of the names of 1746, rejected by Linnæus himself, were, it seems, subsequently adopted by Esper, Retzius, and others; so that there is abundant reason for contending that those *Fauna Suecica* names should be upheld. The other dates, 1751, 1758, and 1767, are each and all found supported by arguments, into whose merits, as they are foreign to my subject, I do not now travel.”
P. 6.

The further abundant and pertinent details and examples, for which I cannot afford space, are worthy the most attentive study; and I think that every candid reader who peruses them will

agree with Baron von Harold, who writes in 'Coleopterologische,' Hefte vi. p. 37:—"The longer and more thoroughly that I occupy myself with the subject, the more the conviction forces itself upon me that a good part of our nomenclature, in so far as it has reference to the literature of the end of the last and beginning of the present century, is nothing more than a protracted and fixed chaos of arbitrariness, inconsequences and blunders, to the sifting and correct dealing with which hardly a beginning has been made." All that the Rules of the British Association have done for us is to supply a ladle wherewith to mix up these undesirable elements. Mr. Lewis has a paragraph on one of the principal causes of the chaos, which he considers the disposition to rout out, appropriate and apply to individual objects, those worthless descriptions which have long been unrecognizable. In this matter I see with him "eye to eye."

"We need not feel surprise at these results. But I must and always shall feel surprise that the authors go into those questions as they do. Worthless in great part the old descriptions now are from one cause or another; and whether they are recognisable or unrecognisable concerns not a living soul. But if they were the perfection of scientific labour, and contained truths of world-wide importance, the old books could hardly be more rigorously studied. The 'chaos' referred to by authors is a 'chaos' created by and only now existing in these worthless descriptions; and there is not a shadow of obligation to touch that chaos at all, in nineteen out of every twenty cases where it is touched. Those who bring us back to that 'chaos' and disturb our nomenclature with the results of their speculations on it, are themselves responsible for the condition of things which (so far as it exists) is *of their own wilful introduction*."—P. 14.

There are other sources of confusion, obviously introduced in many instances for the mere purpose of confusing, but as Mr. Lewis has passed over them in silence, so will I, and, turning to the end, will cite his concluding remarks:—

"But there is still a remedy. Refuse acceptance to these new names, one and all. Treat them as the things which for the most part they are, a jumble of letters not accurately referable to any certain species. Let us adhere to the *accepted* names, approved by universal consent, which we are accustomed to use. Preserve the living names, ignore the dead. So only shall we achieve, in spite of the mischievous stalking-horse, 'priority,' that certainty in nomenclature, the chance of which through it we have nearly

lost for ever. Besides accomplishing this we shall have gotten for ourselves an even more valuable result. We shall have administered a check to a class of publications which tend more than any other agency to impoverish the literature of science. While authors find the roll of fame is supplied by the wrapper of a catalogue, the best may be content to inscribe their names only on that worthless sheet. The hot quest of ephemeral notoriety once made profitless, we may expect that more energies will be directed to the production of serviceable books. Rely upon it, to encourage innovating synonymic lists is, in every way possible, to retard entomological science. This branch of Natural History, from the small differences which divide its subjects and the inequality of nearly all descriptions accurately to express such differences, baffles the 'law' of priority to fix its nomenclature; and sooner or later that conviction must force itself upon all."—P. 85.

Every entomologist may receive instruction from reading Mr. Lewis's 'Discussion'; most will agree with him in his thorough condemnation of the present lawless application of the law of priority: all will be glad to accept a remedy; but from whence is it to come? It is very plausible to issue a "Proposal for the Rejection of all Disused Names," but who shall decide on what names are disused? Take an example:

In 1776 Hübner figured a butterfly as *Papilio Medea*: it bears the same name in the Vienna Catalogue.

In 1777 Esper calls it *Papilio Æthiops*.

In 1787 Fabricius calls it *Papilio Blandina*.

In 1832 Dalman calls it *Hipparchia Neoridas*, and the three previous names are disused by this talented and most learned author.

In 1857 Mr. Stainton calls it *Erebia Blandina*.

In 1870 Mr. Newman calls it *Erebia Medea*.

It would be interesting to know which of these names must be considered "disused" and which not "disused"; *Medea* (1776) and *Blandina* (1787) are still in full request: there is no suggestion that either is disused. We must by some law dispose of one of them. If Priority be not that law, what is?

EDWARD NEWMAN.

Ornithological Notes from Norfolk.

By HENRY STEVENSON, and J. H. GURNEY, jun., Esqrs.

(Continued from Zool. S. S. 3104).

MAY.

Longeared Owl.—On the 21st I caught a young one.—G.*Hawfinch*.—A pair have been seen on several occasions lately frequenting some holly trees in a garden, at Thorpe, near Norwich: they are no doubt breeding there.*Rook*.—Several nests, in the shrubbery at Spixworth Park, were built this year on some tall laurustinus bushes, only from eight to ten feet from the ground.*Missel Thrush*.—May 10. I found a missel thrush's nest in an unusual situation to-day: I got up and found two headless nestlings. Was this the work of a squirrel or a jay? The keeper saw a jay there the other day flying off with six inches of entrail, and a pair of old song thrushes in full cry behind him.—G.*Black Redstart*.—Mr. H. Saunders informs me that when on his way to Cromer, on the 15th, he observed an adult male of this species in a field by the road, near the Erpingham toll-bar. This is, I believe, only the second male bird that has been recognized in Norfolk. One was shot at Hoveton in March, 1870.*Pied Flycatcher*.—A male was seen at Cley on the 1st, and on the 14th a pair were seen at Sall (by Mr. Norgate). Mr. Gunn showed me one in the flesh on the 15th, from Gunton, near Lowestoft, and about the same time a pair were also seen close to Mr. Cremer's house at Beeston.—G.*Pied Wagtail*.—On the 7th I saw one in winter plumage at Cley. On the 27th one of these trustful and confiding birds was found sitting on four eggs at the Mousehold Heath rifle-butts, within four yards of one of the targets, which during the week had been shot at by four or five hundred militia.—G.*Grayheaded Wagtail*.—On the 30th of April Mr. Gunn shot, at Heigham, what appears to be a female of this species.—G.*Wheatear*.—On the 6th a wheatear flew into a cottage of its own accord, and was caught.—G.*Lesser Redpoll*.—Mr. Norgate writes to me from Sparham:—"Lesser redpolls are unusually common here this summer: I found two nests on the 15th, and the contents of two others were brought me a few days ago.—G.

Hooded Crow.—On the 19th one was seen at Northrepps: on the 20th a backward female—perhaps the same—was trapped at Trimingham. I learn from Mr. Boyes that the same day he saw one at Spurn, in Yorkshire.—G.

Rook.—On the 24th a rook was seen eating a young starling at Keswick.—G.

Green Woodpecker.—On the 8th I witnessed an instance of the tenacity of the green woodpecker to its nest. I was shown the hole, which was low enough down to look into. We then adopted every means to induce the bird to leave, but in vain, and it was not until we retired to a distance that she ultimately flew out.—G.

Woodcock.—On the 7th two young woodcocks were found in "Harrison's brake" at Felbrigg. Another nest was also found in the Hercules Wood at Blickling, and Lord Kimberley, in the 'Field' of May 25th, says, "Four woodcocks were hatched in one of my woods this spring. When last seen they were able to fly."—G.

Spring Waders.—On the 7th I observed many ring dotterel at Salthouse and Cley, breeding. The only bird I shot there was a whimbrel: five more were shot about the 13th and sent to Norwich Market. On the 15th I saw at Mr. Gunn's a bartailed godwit, in winter plumage, and on the 17th two in summer plumage, which, with a knot and some turnstones in full plumage, or nearly so, had been sent up from Breydon. He also had four good sanders from near Happisburgh, about the 20th, and one from Breydon.—G.

Spoonbill.—I learn from Mr. R. Upcher that two were seen on Breydon Broad about the middle of the month.—G.

Waterhen.—On the 8th I found twenty-eight waterhens' eggs at Hempstead, with the keeper, who had taken forty-two before I came, besides forty-eight more on the 3rd. He took nearly two hundred last spring.—G.

Garganey.—On the 29th a drake garganey rose close to me at Hoveton, where they have bred this year, as also at Ranworth.—G.

Shoveller Duck.—The shoveller has bred in more than one locality this year. At West Toffis two nests were taken, and hatched off, I am informed, under hens.—G.

Lesser Tern (local "dipears.")—I saw a great many at Blakeney on the 7th.—G.

Nightingale.—Several nests of young were hatched off in the immediate neighbourhood of Norwich about the 26th. On the 30th, after a heavy rain all day, several male birds were in full song towards evening, although the anxious croak of the females indicated young ones close by.

Blackheaded Gull.—On the 27th I visited Scoulton gullery, and found the young birds just beginning to hatch. About 4000 eggs have been gathered this year. Formerly they averaged 10,000. They left off taking them on April 26th. On the 29th I went to the smaller Hoveton gullery, where they are now breeding at four different spots. Both here and at Scoulton I was surprised to see second-year birds, with black-barred tails, which apparently were breeding.—*G*.

Great Crested Grebe.—On the 16th I saw two and a half couples on Ranworth, and found a nest of four eggs. I also saw and got the head of a fine female, which had been unfortunately caught in a rat-trap.—*G*.

Cromer Lighthouse.—May 1st.—A greater whitethroat: wind S.S.W. 2nd.—Another seen to come against the glass, and go away without killing itself: N.N.W. 4th.—A sedge warbler and three whitethroats. 5th.—A sedge warbler, again, and three whitethroats: W.S.W. 6th.—Two whitethroats seen: S.W. 9th.—One whitethroat seen: N.W. 12th.—Sedge warbler: N.E.—*G*.

Errata.—At page 3102 append initial "G" to the note on the missel thrush; and eighth line from the bottom add the words "of April" to "before the 12th."—*J. H. Gurney, jun.; Northrepps, Norwich*.

Ornithological Occurrences in the Neighbourhood of Torquay during the Spring of 1872. By J. H. GURNEY, Esq.

January 16. A turkey, which had nested under a laurel-bush, brought off two young ones, which, though hatched at such an unusual date, were successfully reared. Ten other eggs which the nest contained were all bad.

January 27. A bridled guillemot obtained in Torbay, where this variety is extremely rare.

February 14. Chiffchaff first heard; heard for the second time on the 10th of March. The chiffchaff has been unusually plentiful this spring in the neighbourhood of Torquay.

February 25. A sparrowhawk's nest found containing two freshly-laid eggs.

March 6. Some Guinea-fowls attacked a cat, which they observed on the opposite side of a paddock where they were feeding, and drove her completely away. On the same day field-fares were last seen.

March 16. Some small birds were observed mobbing a missel thrush; the latter was carrying something in its bill, apparently a large worm.

March 31. About 11 P.M. a female chaffinch flew against the window of a bed-room in which a candle was burning, and when the window was opened came into the room.

April 1. Stonechat first seen. This species appears to leave this neighbourhood in winter, though in some parts of England it is, I believe, considered to be resident throughout the year.

April 6. Cuckoo first heard; heard the second time on the 14th.

April 7. Blackcap first heard.

April 11. Greater whitethroat and chimney swallow first seen.

April 14. Willow wren first heard. This species appears less plentiful than usual this spring in the neighbourhood of Torquay.

April 23. House martin first seen.

April 30. Swift first seen.

May 4. A male and female bullfinch were picked up in my garden, where they were lying about fifteen feet apart, alive and apparently uninjured, except that they seemed unable to fly or to make any effort to escape. They were brought to me, and the female died in my hand,—I suspect from my having held her rather too tightly. The male seemed unhurt when put into a cage, but died the following morning. No injury could be found in either bird when they were subsequently skinned, and I am quite unable to account for the condition in which they were found.

May 9. I saw several whimbrels, which had been shot on the Exe during the preceding evening.

May 25. A hen sky lark belonging to Mr. Shopland, of Torquay, which had been alone in a cage for about a year, laid an egg of the normal size and shape, but unusually dark at the thicker end. She had been observed attempting to form a nest with blades of grass pulled from the turf with which she was supplied, and being furnished with a few stalks of hay in addition, formed a rude

nest, in which she deposited her egg, and a second similar egg about five days later.

May 27. Spotted flycatcher first seen.

May 29. A male cuckoo was killed near Torquay, which still retained some portion of its last year's plumage: two secondary feathers in each wing were entirely rufous. The bars on the inner web of all the primaries were considerably tinged with rufous, and the outer webs of most of them were slightly marked on the edge with a similar tint, which was also noticeable across the lower part of the throat immediately above the breast.

J. H. GURNEY.

Ornithological Notes made in Devon and Cornwall during the Month of May, 1872. By JOHN GATCOMBE, Esq.

Gulls, Dippers, Whinchats, Ring Ouzels, &c.—May 6. On my way from Plymouth to Brent, by train, I passed close by a large flock of herring gulls and some herons on the mud-banks at Laira, and observed some yellow wagtails in the meadows near Plympton; by the way, it is really astonishing to see how fearless the gulls and herons have become of a passing train. Jays and magpies were numerous near Ivybridge and the viaducts quite alive with jackdaws, under the wooden arches of which they breed in great numbers. On the rocks and stones in the River Avon, on my way to Dartmoor, I remarked many common sandpipers, gray wagtails and some dippers. My friend Mr. Gervase Mathew informed me that when fishing on the River Walkham, near Plymouth, on the 2nd of May, he saw several young dippers out, but scarcely able to fly; also a family of young gray wagtails, evidently fresh from the nest. On Dartmoor I found the ring ouzel very plentiful, heard their notes in every direction, and found a nest containing four eggs in a large tuft of heath close by the river-side. Observed a great many whinchats also: this species is local with us, and generally found on furze-bushes growing in swampy places, which I have also remarked to be the case in Ireland. On the moor were many lapwings uttering their peculiar cries and diving in the air close by, and carrion crows foraging about (I think) in search of eggs. Notwithstanding the weather was very cold and stormy, a great many swifts and cuckoos were to be seen.

Cormorants.—May 9. Observed a flock of cormorants come in from the sea, and fly in a kind of double line of two and two up the River Tamar: this they occasionally do in summer, especially after the breeding-season, reminding one much of a flock of wild geese.

Starlings and Heron.—A large number of starlings, I am glad to say, have bred this season on the high walls by the sides of the trench surrounding the fortifications at Devonport, taking possession of the holes left in the walls for draining called “weep holes,” and, fortunately, out of the reach of boys. Within comparatively a few years, such a thing as a young starling was scarcely known in the neighbourhood of Plymouth, and but four or five years ago a birdstuffer gravely informed me that he had a very rare bird, “the solitary thrush of Tartary,” which, of course, I found to be nothing more than a young starling, and another had a bird that he “did not exactly know,” but was certain it was “some kind of thrush.” This morning I was much interested in watching the graceful spiral flight of a heron, which ascended in small circles until nearly out of sight, and then made straight off.

Swifts.—May 16. Went to Sheep’s Tor, on Dartmoor, but found birds generally scarce, although swifts were plentiful.

Herring Gulls, Cormorants, Ravens, Ring Doves, Peregrine Falcon, &c.—May 20. Visited the Land’s End, where I was much interested in watching the herring gulls sitting on their nests, which were placed on the ledges of the cliffs, rather far apart, quite exposed to view, apparently well made and of a deep saucer-shape. I was, however, much disappointed at not finding any razorbills or guillemots breeding there, but was told that there were a great many on the Brisson’s Rock, not far off: however, although I had a good telescope with me, I could not make any out, probably owing to the weather being rather thick and stormy. There were a few eggs of the razorbill, guillemot and herring gull for sale at the little inn close by, but they did not look at all recent. Remarked several cormorants on the rocks, one great blackbacked gull, some kestrels and a pair of ravens. A dealer in live birds at Plymouth has had nearly twenty young ravens sent to him this season from the coast of Cornwall; the men who got them said that they did so at the risk of their lives, and had to walk twenty miles and carry forty pounds of rope to the breeding-places. I saw in his shop, a few days since, a fine young peregrine falcon, in the down, obtained

from the same locality. There were two young birds in the nest when the man went down, but one was accidentally thrown out, falling on the rocks two hundred feet below. The one saved seems to thrive well, although almost entirely covered with down, and only a few short feathers appearing on the wings and tail. What a pity it is that there is, as yet, no "close season" for every kind of bird. This young peregrine falcon generally lies down, but now and then sits bolt upright, resting on the whole length of its tarsus, like the guillemot, the large feet seemingly quite weak and powerless.

Herring Gulls and Ring Doves following the Plough.—It was a very pretty sight to watch the herring gulls, in their beautiful snowy dress, tripping after the plough in the fields near their breeding-places, at the Land's End, and I also observed two or three ring ring doves similarly engaged; but my friend Mr. Mathew tells me that a week or two ago he was much surprised on seeing a flock of full fifty ring doves following the plough, on his way to Kingsbridge, Devon: of course, they were looking for certain roots and seeds turned up, and not for worms and grubs, like the gulls.

Lesser Blackbacked Gull.—The adult lesser blackbacked gulls have now nearly all left us for their breeding-stations, but on the 31st I saw a flock of nearly one hundred immature birds, in the gray or rather brown dress, resting in a field near the water, with only two or three old ones among them. I have often remarked that a certain number of gulls might be seen keeping by themselves, far away from the breeding-stations, during the whole spring and summer: these, I suspect, are young birds of the previous year, and "non-breeders" for the time being.

Partridge and Pheasant laying in the same Nest.—The keeper at Port Eliot, the seat of the Earl of St. Germans, Cornwall, met with a curious circumstance lately, having found partridge's and pheasant's eggs in the same nest.

Spotted Flycatcher.—The spotted flycatcher seems to be very scarce and late with us this season: I have observed but two, and those not until nearly the end of the month.

J. GATCOMBE.

8, Lower Durnford Street, Stonehouse, Plymouth,
June 5, 1872.

A Bill for the Protection of Wild Fowl during the Breeding Season.

[I have delayed printing this Bill for several months, expecting to have been able to speak of it as an "Act" instead of a "Bill": it has been read a second time, but may perhaps be altered slightly in Committee or in the House of Lords.—*Edward Newman.*]

WHEREAS the wild fowl of the United Kingdom, forming a staple article of food and commerce, have of late years greatly decreased in number; it is expedient therefore to provide for their protection during the breeding-season:

Be it enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same:

1. That the words "wild fowl" shall for all the purposes of this Act be deemed to include the different species of avocet, curlew, dotterel, dunbird, dunlin, godwit, greenshank, lapwing, oxbird, peewit, phalarope, plover, plover's-page, pochard, purre, mallard, redshank, reeve or ruff, sanderling, sandpiper, sealark, shoveller, snipe, spoonbill, stint, stone-curlew, stonehatch, summer-snipe, teal, thick-knee, whaup, whimbrel, widgeon, wild duck, and woodcock; the word "sheriff" shall include steward and also sheriff substitute and steward substitute.

2. Any person who shall kill, wound, or attempt to kill or wound or take any wild fowl, or use any boat, gun, net, or other engine or instrument for the purpose of killing, wounding, or taking any wild fowl, or shall have in his control or possession any wild fowl recently killed, wounded, or taken, between the *first day of April* and the *first day of August* in any year shall, on conviction of any such offence before any justice or justices of the peace in England or Ireland, or before the sheriff or any justice or justices of the peace in Scotland, forfeit and pay for every such wild fowl so killed, wounded, or taken, or so in his possession, such sum of money not exceeding *one pound* as to the said justices or sheriff shall seem meet, together with the costs of the conviction, unless he shall prove to the satisfaction of the said justice or sheriff that the said wild fowl was or were bought or received prior to the said first day of April, or of or from some person or persons residing out of the

United Kingdom: Provided always, that this section shall not apply where the said wild fowl is a young bird unable to fly.

3. The Home Office as to Great Britain, and the Lord Lieutenant as to Ireland, may, upon application of the justices in quarter sessions assembled of any county, extend or vary the time during which the killing, wounding, and taking of wild fowl is prohibited by this Act; the extension or variation of such time by the Home Office shall be made by order under the hand of one of Her Majesty's Principal Secretaries of State, after the making of which order the penalties imposed by this Act shall in such county apply only to offences committed during the time specified in such order, and the extension of such time by the Lord Lieutenant shall be made by order to be published in the Dublin Gazette, and a copy of the London Gazette or Dublin Gazette containing such order shall be evidence of the same having been made.

4. Where any person shall be found offending against this Act, it shall be lawful for any person to require the person so offending to give his Christian name, surname, and place of abode, and in case the person offending shall, after being so required, refuse to give his real name or place of abode, or give an untrue name or place of abode, he shall be liable, on being convicted of any such offence before a justice of the peace or the sheriff, to forfeit and pay, in addition to the penalties imposed by section two, such sum of money not exceeding *two pounds* as to the convicting justice or sheriff shall seem meet, together with the costs of the conviction.

5. One moiety of every penalty or forfeiture under this Act shall go and be paid to the person who shall inform and prosecute for the same, and the other moiety shall, in England, be paid to some one of the overseers of the poor, or to some other officer (as the convicting justice or justices may direct), of the parish, township, or place in which the offence shall have been committed, to be by such overseer or officer paid over to the use of the general rate of the county, riding, or division in which such parish, township, or place shall be situate, whether the same shall or shall not contribute to such general rate; and, in Scotland, to the inspector of the poor of the parish in which the offence shall have been committed, to be by such inspector paid over to the use of the funds for the relief of the poor in such parish; and, if recovered in Ireland, such penalty shall be applied according to the provisions of the Fines Act (Ireland), 1851, or any Act amending the same.

6. All offences mentioned in this Act, which shall be committed within the jurisdiction of the Admiralty, shall be deemed to be offences of the same nature and liable to the same punishments as if they had been committed upon any land in the United Kingdom, and may be dealt with, inquired of, tried, and determined in any county or place in the United Kingdom, in which the offender shall be apprehended or be in custody, in the same manner in all respects as if they had been actually committed in that county or place; and in any information or conviction for any such offence, the offence may be averred to have been committed "on the high seas," and in Scotland any offence committed against this Act on the sea coast, or at sea beyond the ordinary jurisdiction of any sheriff or justice of the peace, shall be held to have been committed in any county abutting on such sea coast, or adjoining such sea, and may be tried and punished accordingly.

7. Where any offence under this Act is committed in or upon any waters forming the boundary between any two counties, districts of quarter sessions or petty sessions, such offence may be prosecuted before any justice or justices of the peace or sheriff in either of such counties or districts.

[I think it well to append to this reprint of the Bill the following extracts from a letter addressed by the Baroness Burdett-Coutts to the Editor of the 'Times,' at the request of the Society for the Prevention of Cruelty to Animals.—*E. Newman.*]

"The probable extermination of our birds by bird traffic, and the great cruelty inflicted through its agency, are the main reasons which have induced the committee to ask you kindly to grant this opportunity to suggest that an Act for the protection of birds during the season when the young birds cannot live without their parents' care might well be enacted for all varieties, similar to those laws by which sea-birds are protected in England, and small birds in Germany. This security would restore the natural proportion of one sort of bird to another, which has been destroyed by the indiscriminate and ignorant slaughter of our feathered friends and the larger birds which prey on them; and it would prevent the wholesale cruelty inflicted on our most beautiful and delightful visitants by bird-traders. I have been selected to make this suggestion, and represent the pitiable case of our little clients, because I am

able to speak of the practices of the trade alluded to, from information within my own knowledge. I have endeavoured to induce the nightingale to build its nest in my garden at Highgate with success, and it would shortly have been a welcome visitant in the neighbouring gardens; but as soon as the poor things began to sing they were trapped. Not caring to breed nightingales for bird-fanciers, I have given up the attempt; but the other pretty denizens of air who come for shelter and roost in my trees are equally snared by trappers, and, owing to this circumstance, my garden will shortly be left in possession of superabundant caterpillars and other insect life,—a result which has unhappily been prevalent on the Continent, and has caused serious injury to agricultural and garden produce there. I ascertained from my gardener that these bird-trappers come mostly on Sundays, during church-time, and he also told me that many of the revolting practices attributed to them are founded on fact. This also I have had verified for me at the Sunday bird mart, where may be found sometimes 20,000 persons congregated and occupied in bird traffic on Sundays. Adding these men to others employed at the same hour in ensnaring birds gives a large number of persons engaged, not in buying and selling, but in following the most demoralizing practices. I allude to the taking away from the creature God's gift of sight, by the application of acids or a red-hot wire, in order to qualify it to act more efficiently as a decoy to its unensnared companions, and to the scarcely, if at all, less cruel practice at the bird mart of "training" by means of perpetual darkness, as well as enveloping tiny cages in thick coverings, so that the poor blinded occupants, surrounded by cages of non-singing birds uncovered and for sale, may attract a multitude of dupes by their superior music, and serve to gull them into a delusion that the song of the decoy, which they have admired, issues from the throats of the timid little creatures they now purchase and carry to their homes.

The practice of entrapping birds at this season of the year induces a second form of cruelty. If the hen be taken from its young, protracted sufferings and death follow to the bereaved progeny; and if the helpless young be taken and exposed for sale at the mart, perhaps for several days, they also will inevitably suffer from privations before death ensue, even should their helplessness touch some soft part of the heart of the dupe who has bought them and done his best to rear them; otherwise they will be starved in

their miserable cages, or thrown to the cat. I remember some time ago buying a pretty little bird, which seemed very tame, but exhausted, and on bringing it home and giving it water, which it was unable to drink, I discovered ligatures introduced amid its feathers, which hindered its movements, and fully accounted for its apparent tameness. I cut its fetters and restored the bright creature to air and liberty. I scarcely venture to hope that the poor birds bought in the purlieus of Bethnal Green are equally fortunate."

Moles.—I am desirous of asking your opinion as to the *rationality* of the practice of trapping and endeavouring to exterminate moles on grass lands. I am the proprietor of a few acres in North Wiltshire, and my tenants bring in (annually) bills for payments to professional mole-catchers. Now in my untutored mind there floats the idea that the destruction of moles is a mistake. All that I can get specifically laid to their charge is that the mole-hills interfere with the mowing; but how, if these "hills" were systematically knocked about over the grass? "Yes," the reply is, "but they (the hills) are cast up *in* the mowing grass,"—that is, after it is allowed to grow for mowing,—“and you cannot then get at the ‘hills’ to beat them about.” Now I am ignorant enough to think that it is only in the fall of the year that these animals make their “runs,” and I have always looked at the hills as a cheap and ready freshener of the surface—a sort of manurial top-dressing of value.—*Robert Brewin; Cirencester, May 30, 1872.*

[I am unable to give an authoritative opinion. My information is derived from books, and these are not very reliable. Mr. Bell, in his ‘History of British Quadrupeds,’ gives a very good summary of all that has been published previously to the date of that work, but he does not appear to add much from actual experience. I shall be much obliged if any of my correspondents will give my friend and myself the benefit of their views on the subject. Will Mr. Reeks, Mr. Cordeaux, Mr. Rodd, Mr. Gurney and others relate their experience?—*Edward Newman.*]

Seal in the Dene.—One of the game-watchers, with the aid of his dog, captured a seal not far from the mouth of the Dene, about ten days ago. It was lying on a rock when first seen, and had evidently been caught napping, there being but little water left around it. It weighs thirty pounds, is still alive, and is becoming remarkably tame, showing great affection for a boy, the watcher’s son. There happened to be a dead calf not far off, which the man procured, and it has lived chiefly on that since its capture; but veal, as well as being an unnatural, is rather an expensive

diet for a seal in a poor man's possession; and, I may add, it is for sale. It gets a shower-bath sometimes.—*J. Selater; Castle Eden Dene, June 5, 1872.*

Ornithological Notes from North Wales.—On the 28th of May I walked up to a mountain lake for the purpose of trout fishing, and made the following notes, which may perhaps be of some interest to the readers of the 'Zoologist.' In passing through a wood I saw a pied flycatcher, a fine male, in beautiful plumage. In a hedge by the wayside I found two nests of the lesser redpole: these little birds breed with us every year: one day last week I found no less than seven nests; they were mostly built in the bushes that overhung the River Dee, and I was much struck with the beautiful way in which they were lined with the down from the catkins of the willow. On the bare open fields, which are surrounded by high stone walls and have been reclaimed from the moor, lapwings were extremely numerous, wheeling round overhead and making the air resound with their continual cry of "peewit." Wheatears perched upon the walls, among which I noticed some of this year's young ones. Whinchats and stonechats were flitting about and continually perching on the tops of the highest bushes of the gorse: a few of the latter stay with us through the winter. On the moor I noticed several curlews, which were evidently in a high state of anxiety about their young ones, for they flew round about overhead within gunshot, uttering the while their peculiarly wild and interesting note: these birds breed in considerable numbers on all the surrounding moors, and I have often found their nests. Snipes were numerous in all the bogs, and on being put up actually began to "drum." Fine old male ring ouzels, with conspicuous white collars, perched upon the rocks, uttering their harsh note; while the females and young ones of this year, already out of the nest, were continually rising out of the heather, and, after flying a short distance, dropping into it again. On the lake a wild duck with her brood was swimming about; while a pair of old coots, also followed by their numerous progeny, retreated to the immediate shelter of a bed of rushes on my approach. From a clump of heath not far from the water I put up a teal, which evidently had eggs or young ones in the vicinity, for she flew round and round me, sometimes so close that I might almost have struck her with a stick, feigning to be wounded and adopting every possible device that was calculated to attract me from the spot. After staying for some time I returned home, infinitely more pleased with the variety of bird-life to be seen on our Welsh moors than the fishing, for the trouting qualities of the lake, whatever other attractions it might have possessed, were not of first-rate order.—*W. J. Kerr; Denbighshire, North Wales.*

Birds attracted by Lighthouses.—The following killed themselves against the Portland high light (Dorsetshire) and were sent to me:—Lesser tern,

kingfisher, waterhen, chaffinch, wheatear, two pied wagtails, three redstarts: and the following against the Lizard light (Cornwall):—Pied flycatcher, gray wagtail, pied wagtail, two redstarts (rare), knot, sedge warbler (two), song thrush (two), wheatear (seven). I regard it as a great point gained to get even the names of the species, about which we were entirely in the dark. I regret that I cannot give the dates, but I must say I do not think they would shed as much light on migration as some people suppose: useful they would be, but not more so in my opinion than the observations at present taken by hundreds of out-door naturalists. Mr. Jones, the bird-stuffer at Bridlington Quay, once told me that seventy dozen birds flew against the Flamborough lighthouse *in one night*, which, if true, far exceeds the number mentioned by Bishop Stanley ('History of Birds,' p. 91). They were in all probability starlings, but among them were sixteen ring ouzels, which were taken to him by a Mr. Metcalfe. The landlord of the inn spoke of "starnells," "bushels at a time," under the lighthouse. I have in my collection a Scops eared owl, which dashed itself against Cromer lighthouse, and was picked up by a boy.—*J. H. Gurney, jun.; Northrepps, Norwich.*

Are Guernsey Birds British?—I must thank your correspondent for his answer (Zool. S. S. 3109) to my questions (S. S. 3066). He defines British as "merely Great Britain and the adjacent islets;" I suppose the Shetland Isles are included in this definition. Though the Channel Islands *are* nearer to France than to England, they are nearer to England than the Shetland Isles are to Scotland, so that if a line extended equally round Great Britain, which included the Shetland Isles, the Channel islands would be included also. My idea of the imaginary boundary is this: that it should be at a certain equal distance all round Great Britain, and either all objects obtained within that line to be considered British, whether the land is under foreign rule or not, or that where the line comes across foreign countries it should not take effect, so that though Calais might be within the line, yet because it is not part of the British empire the birds, &c., collected there would not be called British.—*C. B. Carey; Candie, Guernsey.*

[I was also rather puzzled with my correspondent's reply: the question whether Shetland is an "adjacent islet" is a very pertinent one.—*Edward Newman.*]

Spring Arrivals at Carshalton.—March 6th, whitethroat; 24th, wryneck. April 9th, nightingale; 13th, lesser whitethroat; 17th, cuckoo heard; 20th, swallow; 27th, sand martin. May 14th, swift; 18th, flycatcher.—*A. H. Smee.*

Arrival of Spring Birds.—Since I last wrote I have seen the following birds:—Flycatcher, May 23rd, at Ramsdale. Nightjar, May 24th, at Rainworth. I also saw a teal with six young ones, swimming about on the

lake the same evening; there are several teal's nests here this year.—*J. Whitaker, jun.; Rainworth Cottage, Notts.*

Collections of Eggs.—We are starting a small Natural-History collection here, and intend to include birds' eggs. I should feel very much obliged if you would kindly tell me what you consider the best substance upon which to lay the specimens. The drawers in our cabinet are divided into compartments, and as I do not wish to put the eggs upon cardboard or the like, some soft substance becomes necessary, to form a bed upon which they may rest. Would bran, sawdust, or sand, answer the purpose?—*George H. Pope; Haileybury College, Hertford, May 16, 1872.*

[When I collected eggs I used pink cotton wool, but I am aware various other materials are employed. Professor Newton recommends that tow, flax, or wool be used in packing eggs. I shall feel obliged if either of our leading ornithologists will answer Mr. Pope's question.—*Edward Newman.*]

Honey Buzzard in the New Forest.—I have been informed on good authority that in the early part of the present month a nest of the honey buzzard containing two eggs was found in the New Forest, in the parish of Brockenhurst. Unfortunately, not only were the eggs taken, but both the parent birds were trapped.—*J. H. Gurney; June 24, 1872.*

Kestrel, Sparrowhawk and Cuckoo.—On the 7th of June a kestrel was brought alive to Mr. Shopland, naturalist, of Torquay, which had been caught in a singular manner. Some strong threads with bits of paper tied on them at intervals had been stretched over some ground in which seeds had been newly sown, to protect the seeds from small birds; these threads, being subsequently removed, were thrown at random on some adjacent bushes, and by some means a kestrel became so entangled in them that it could not escape, and was thus captured. The kestrel was a male bird, and from its plumage I suppose it to have been about twelve months old. On the 10th of June a female sparrowhawk, killed near Torquay, was brought to Mr. Shopland, and dissected by him in my presence. The stomach contained the newly swallowed remains of a finch, and also (strange to say) some unmistakable fragments of the shell and living membrane of a sparrowhawk's egg. Probably the hawk had devoured one of her own eggs, and as she was in full moult it is quite possible that her being so, may have been the cause of a morbid appetite. The hawk appeared by its plumage to have just completed its second year; its eggs were numerous but small, none being larger than a grain of millet. Mr. Shopland informs me that a few years ago he found in the stomach of a female cuckoo some fragments of blue eggs, apparently those of a hedgesparrow.—*J. H. Gurney; Marldon, Totnes, June 13, 1872.*

A Sparrowhawk on board Ship.—The steamer 'North-Eastern,' Captain White, now lying at South Shields, was off Odessa in March last, and while passing that port she was boarded by a sparrowhawk, which stuck to the

vessel all through her Black Sea voyage, came with her to Amsterdam, and thence to the Tyne.—*South Shields Gazette and Daily Telegraph*, May, 1872.

Dark-coloured Eggs of the Golderest.—I may mention that to-day a nest of goldencrested wren's eggs was brought me, in which the eggs were quite brown, almost as dark as nightingale's. The colouring matter, whatever it is, washes off almost entirely.—*George H. Pope*.

Redpole Breeding in Lancashire.—I feel much pleasure in being able to state that the redpole, or lesser redpole (*Fringilla linaria*), breeds in Lancashire, especially as I think the fact has never before been recorded. I trust therefore that the following notes about the breeding of this little bird may prove of some interest to the readers of the 'Zoologist.' As yet I have only been able to discover three nests of the redpole in this neighbourhood, but, as I have seen several pairs of these birds about here, I have no doubt that many more might be found. The first nest of this species was brought to me on the 24th of May: it contained two fresh eggs, of a dull greenish gray colour, marked with a few very faint reddish spots and streaks, principally at the thick end, and a few dark rusty and black spots and streaks. The nest was placed in a thickish hawthorn hedge, about five feet from the ground, and was composed of grass, roots and twigs, a little moss, &c., which materials were interwoven with wool and a few feathers. The lower part was loosely put together, but the upper and inner parts were firmly compacted. The inside or cavity of this nest measured nearly one inch and three-quarters in diameter and one inch in depth; it was beautifully lined with sheep's-wool. Although I did not see the birds that belonged to the nest, yet I am quite sure they were of this species, as both the nest and eggs are almost identical with the other two nests I found, and which I identified as belonging to the redpole. The second nest I found on the 2nd of June: it was placed in a high hawthorn-bush (which stands in a thin hedge), full seven feet from the ground, and was composed of exactly the same materials as the one already described, with the exception of the lining, which consisted of willow-catkins (of *Salix cinerea*, I think,) instead of wool; this may be owing to the late bad weather, and the consequent lateness of the season, as the catkins were not yet out on the date of the discovery of the first nest. This second nest contained three fledged young ones; in fact, they were so well fledged that they managed to escape out of their nest before I could reach it. The old birds seemed very anxious about their young, for they kept fluttering about me as long as I remained near the nest, uttering a peculiarly loud but soft alarm-note. On the 16th of June I succeeded in finding a third nest of the redpole; it had only been just completed, and was yet empty. The nest very much resembled the two I had previously found; but the bird had used, besides the materials above mentioned, small twigs for the lower and outer parts. The interior was beautifully lined with the wool of the willow-catkins, horse-hair and a

few small feathers; the cavity was perfectly round, and measured one inch and three-quarters in diameter, and rather above one inch and one-eighth in depth. This nest was placed in a low rose-bush (*Rosa canina*), which forms part of a low hedge, about three feet from the ground, and was, as in the other cases, badly concealed. I visited it again on the 20th instant, when it contained two eggs, very similar to those mentioned above, of which I took one. Two days later I revisited it, and found the female redpole sitting on three eggs; she sat so close as almost to allow me to capture her with my hand. I also heard the male's peculiar alarm-note. All these nests and eggs are now in my collection.—*A. von Hügel; Stonyhurst, Lancashire, June 25, 1872.*

Correction of an Error.—Zool. S. S. 3112, eighteenth line, for Branksea Isle read Brownsea Isle.—*A. v. H.*

White's Thrush.—In answer to Mr. H. R. Leach's inquiry (S. S. 3111) as to the comparative length of the tarsus and middle toe of White's thrush with that of the missel thrush, in the specimen described by me the tarsus (as stated) is one inch and a half; the middle toe one inch and one-sixteenth, or with the claw one inch and five-sixteenths; the hind toe and claw one inch. In the missel thrush the tarsus is one inch and one-eighth; the middle toe one inch, or with the claw one inch and a quarter; the hind toe and claw seven-eighths of an inch. This measurement, it will be seen, is totally at variance with that of Mr. Leach, who does not say whether it was taken from an Australian, Japan, or British-killed specimen, all of which seem to differ from each other more or less, and all are known as White's thrush. I was not aware that this peculiarity existed in any of them, and I have not at present an opportunity of examining any of them, but am much obliged to Mr. Leach for calling my attention to it. Thanks also to Mr. J. H. Gurney for his note (Zool. S. S. 3020), which drew my attention to Mr. R. F. Tomes' description in the 'Ibis' for 1859 of the specimen obtained near Stratford-on-Avon. I read it with much interest only last week, and it enables me to point out to Mr. Leach that in the specimen described by Mr. Tomes the tarsus is longer by one line than both the middle toe and claw. Dr. Tristram, of Greatham, tells me he saw a White's thrush on the 10th of April last; it alighted on a tree close to his house, he was only a few yards from it, and plainly saw the crescentic markings. A pair of missel thrushes immediately began to bully and chase it about the lawn, when it flew away southwards. The missel thrushes have nested in the same tree since, and no doubt had chosen it before then for that purpose, and did not like to be intruded upon by a stranger. Dr. Tristram thinks this may have been the mate of the bird obtained on the Dene here.—*J. Selater; Castle Eden Castle, June 5, 1872.*

[The most interesting notice with which Mr. Selater's communication concludes may possibly confirm the opinion of those who believe our

English White's thrush to be the young of the missel thrush; I have witnessed just such a scene this morning: a pair of tumbler pigeons have brought off two hatches this season; the second consists of only a single bird: this forlorn individual is continually applying to his parents for food, and they are as constantly bullying him, for the hen has hatched a third time, and wishes the attention of her husband to be given to this third brood. The poor ill-used elder offspring has been driven quite away to seek his fortune elsewhere. I have witnessed the same proceeding on many previous occasions, not only with pigeons, but with paroquets and tree sparrows; indeed, those used to the breeding-habits, supposing them to have the critical eye to perceive the distinctive characters of White's thrush, would have thought this little exhibition most conclusive evidence that expellers and expelled were of the same species.—*Edward Newman.*]

Correction of Errors.—Allow me to point out the following errors in the 'Zoologist' (S. S. 3043):—In describing the under surface of White's thrush the semicolon should be placed after the word "tip"; and in the description of the greater wing-coverts of the missel thrush read "five" instead of "fine."—*J. Selater.*

Wilson's Snipe in Cornwall.—I may have to report to you officially the occurrence of *Scolopax Wilsoni* as a British bird. In the month of January, 1838, my attention was drawn by Mr. Vingoe to a snipe he had to stuff having sixteen tail-feathers, but in other respects exactly resembling our common *S. Gallinago*. I made a note of it at the time in my interleaved Temminck. This specimen has come into my possession within the last day or two.—*Edward Hearle Rodd; Penzance, June 17, 1872.*

[Since the preceding was in type Mr. Rodd has submitted the bird to Mr. Gould, who states that the colour and arrangement of colours of the tail-feathers differ from *Scolopax Wilsoni*. Ornithologists will therefore please to suspend their judgment for the present.—*Edward Newman.*]

Sanderlings at the Mouth of the Mersey.—June 1st.—There have been large flocks of sanderlings on the flats at the mouth of the Mersey to-day. I procured eleven, and could have trebled that number if I had desired, most of them in complete summer plumage; they are surely making a very late stay on our coasts this year. June 11.—I observed a small flock of about fifteen sanderlings to-day, out of which I procured one. Is this delay in their migration to be accounted for by the rough weather and strong north-westerly winds we have had lately?—*H. Durnford; 1, Stanley Road, Waterloo, Liverpool, June 12, 1872.*

Gullbilled Tern in Hampshire.—On the 14th of May a fine adult specimen of the very rare "British" gullbilled tern (*Sterna anglica*), which is now in my possession, was killed near Christchurch, Hants. Unfortunately Mr. H. Hart, bird-preserver, of Christchurch, from whom I procured this

fine bird, neglected to ascertain its sex.—*A. von Hügel; Stonyhurst, Lancashire, May 25, 1872.*

Coluber Austriacus.—The Rev. O. Pickard-Cambridge, in the 'Zoologist' for June, referring to a capture of *Coluber austriacus* (*Coronella lævis, Bois.*), mentions the want of records of specimens mentioned, but apparently not verified. I therefore wish to record the capture, last summer, of an example of this species on a bank bounding a heath in this place. It was a fine specimen, measuring quite twenty inches. A friend subsequently showed me two small ones in a bottle, both taken by himself near the same locality. I have not yet been able to find another, although my searches have been frequent. I believe until Mr. Pickard-Cambridge discovered his specimen, the only recorded captures have been in this place. This snake would appear to be easily killed, as one moderate stroke from the slight handle of my pocket entomological net killed it, without apparent injury. Should I be fortunate enough to find others I will send you the records.—*E. B. Kemp Welch; Bournemouth, June 8, 1872.*

Proceedings of the Entomological Society.

May 6, 1872.—H. T. STANTON, Esq., F.R.S., Vice-President, in the chair.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Royal Society,' No. 133; presented by the Society. 'Verhandlungen der k. k. zoologisch-botanischen Gesellschaft in Wien,' vol. xxi.; by the Society. 'The Canadian Entomologist,' vol. iv., No. 3; by the Editor. 'Exotic Butterflies,' part 82; by W. W. Saunders, Esq. 'L'Abeille,' livr. 3, 4 & 5; by the Editor. 'The Entomologist's Monthly Magazine' for May; by the Editors. Newman's 'Entomologist' and 'The Zoologist' for April and May; by the Editor. 'Notice sur divers Lépidoptères du Musée de Genève,' par M. A. Guenée; by the Author.

By purchase:—Gemminger and von Harold, 'Catalogus Coleopterorum,' tome viii., pt. 2.

Election of Members.

The following gentlemen were balloted for and elected:—Lieut. H. Murray, 104th Fusiliers, as an Ordinary Member; and J. Eardley Mason, Esq. of Alford, Lincolnshire, as an Annual Subscriber.

Exhibitions.

Mr. Edward Saunders exhibited a series of species of Australian Buprestidæ, illustrating the sexual differences existing in these insects, the male in all cases being much smaller than the female.

Mr. F. Smith exhibited a large collection of Hymenoptera, chiefly Aculeata, sent from Japan by Mr. G. Lewis. The collection was strikingly European in its aspect, and, with the exception of one genus of ants, all the genera were European. The genera represented were Camponotus, Tapinoma, Pölyrhachis, Poneræ, Formica, Tiphia (four species), Mutilla (one species only), Scolia, Pompilus (allied to a North-American form), Ammophila, Spheæ, Bembex, Vespa, Sphecodes, Nomada, Cœlioxys and Halictus. Some of the species appeared to be identical with European forms, such as Camponotus pubescens and ligniperdus and Spheæ argentata. Among the Tenthredinidæ the genus Hylotoma was represented by six species, all probably new; and there was also a species of Sirex extremely like S. gigas, but differing from it in the constricted base of the abdomen. The collection was sent from Hiogo.

Mr. Verrall exhibited a specimen of Syrphus lasiophthalmus with a peculiar malformation of two of the tibiæ, those members appearing as if they had been broken and badly united afterwards. He considered it was due to an injury received just after the insect had emerged from the puparium, when the parts were soft.

Mr. M'Lachlan remarked that he had observed an analogous malformation in a sawfly (Hylotoma fasciata). See Proc. Ent. Soc. 1867, p. xcix.

Mr. Stainton exhibited an aspen-leaf sent by Lord Walsingham from Fort Klamath, Oregon, pierced by a multitude of small oval holes, each indicating the place where a small mining Micro-Lepidopterous larva of the genus Aspidisca had cut out its case when full fed. He had figured a smaller leaf so attacked on the cover of the 'Entomologist's Annual' for 1872. He also exhibited living and dead examples of the perfect insect bred from cases sent to him by post by Lord Walsingham.

Papers read.

Mr. Edward Saunders read "Descriptions of twenty new species of Buprestidæ."

Mr. H. W. Bates read a memoir "On the Longicorn Coleoptera of Chontales, Nicaragua," chiefly drawn up from materials collected by Mr. Thomas Belt near the mining village of Santo Domingo, in lat. 12° 16' N., long. 84° 59' W., nearly midway between the Atlantic and Pacific Oceans, in the forest region of the lower levels. Of the 242 species enumerated 133 were peculiar to Chontales, 38 were found also in Mexico, 5 also in the West Indian Islands, 5 also in the United States, 24 also in New Granada and Venezuela, 22 also in the Amazon Region, 10 also in South Brazil, and

5 were generally distributed in tropical America. Of 129 genera among which the species were distributed, only 7 were found also in the Old World, but 95 were universally distributed in tropical America. An analysis of these materials elicited two general facts of much interest: *firstly*, the homogeneity of the type of the insect fauna of the forest region of tropical America, extending over probably 45 degrees of latitude; *secondly*, the existence of a distinct northern element whose metropolis is Central America. The author strongly condemned crude attempts at generalization, such as were exhibited in some recently-published papers on the geographical distribution of Coleoptera, because in nearly all cases they were based upon insufficient evidence, and were untrustworthy on account of the uncertainty of the true generic position of the materials.

June 3, 1872.—Prof. WESTWOOD, M.A., F.L.S., President, in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—
 ‘Iconographie et Description des Chenilles et Lépidoptères’ inédits par M. P. Millière, tome i., ii., iii., livr. 24—27; ‘Die Schmetterlinge Deutschlands und der Schweiz systematisch bearbeitet von H. v. Heinemann, erste Abth., Gross-schmetterlinge; Zweite Abth., Kleinschmetterlinge,’ tome i., ii., Heft i.; ‘Notiser ur Sällskapet pro Fauna et Flora Fennica Förhandlingar,’ t. ii., iii., ix., x., xi.; ‘An Illustrated Natural History of British Butterflies,’ by Edward Newman, F.L.S., &c.; ‘The Cabinet List of the Lepidoptera of Great Britain and Ireland,’ by H. Guard Knaggs, M.D., &c., the Tineina being elaborated by H. T. Stainton, Esq., F.R.S., &c.; ‘The Lepidopterist’s Guide,’ by H. Guard Knaggs, M.D., &c.; presented by J. W. Dunning, Esq. ‘Annales de la Société Entomologique de France,’ 5e Série, tome i.; by the Society. ‘Berliner entomologische Zeitschrift,’ 1871, Heft. 2, 3; 1872, Heft. 1; by the Society. ‘The Canadian Entomologist,’ vol. iv., No. 4; by the Editor. ‘L’Abeille,’ 1872, livr. 6 & 7; by the Editor. ‘Fourth Annual Report on the Noxious, Beneficial and other Insects of the State of Missouri, made to the State Board of Agriculture, pursuant to an appropriation for this purpose from the Legislature of the State,’ by Charles V. Riley, State Entomologist; by the Author. ‘Proceedings of the Scientific Meetings of the Zoological Society of London,’ 1871, parts ii. & iii.; by the Society. ‘Proceedings of the Royal Society,’ No. 134; by the Society. ‘Bulletino della Società Entomologica Italiana,’ iv., trim i.; by the Society. ‘Report of the Entomological Society of the Province of Ontario, for the year 1871;’ by the Society. ‘The Zoologist’ for June; ‘Newman’s Entomologist’ for June; by the Editor. ‘The

Entomologist's Monthly Magazine' for June; by the Editors. 'A Discussion of the Law of Priority in Entomological Nomenclature; with Strictures on its Modern Application; and a Proposal for the rejection of all disused Names,' by W. Arnold Lewis, F.L.S., M. Entom. Soc. Lond., Barrister-at-Law; by the Author. 'Notes on some Arachnida collected by Cuthbert Collingwood, Esq., M.D., during Rambles in the China Sea, &c.; 'Descriptions of some British Spiders new to Science; with a notice of others, of which some are now for the first time recorded as British Species;' by the Author, the Rev. O. P.-Cambridge. 'Contributions pour servir à l'histoire-naturelle des Ephémérines,' two pamphlets; by the Author, M. le Dr. Emile Joly.

Exhibitions, &c.

Mr. Stainton exhibited a twig of cork-oak (*Quercus suber*) from Cannes, placed in his hands by Mr. Moggridge, bearing examples of a large black, berry-like Coccus.

Prof. Westwood exhibited a cotton-like mass enveloping the cocoons of a minute parasitic hymenopterous insect of the genus *Microgaster*, which infested the caterpillar of some large species of Bombycidae in Ceylon. The mass was the product of the parasites of a single larva. He had extracted therefrom 717 of the parasites, and, as many more remained, there could be little doubt but that about 1000 of these insects had been nourished within this single caterpillar.

Mr. F. Moore stated that he had observed a similar occurrence in a larva of a species of *Odonestis* from Bombay.

Prof. Westwood also exhibited an apple-twig, the buds of which were destroyed by some small larva, apparently pertaining to the Tortricidae. The outside of the twig was much blackened, and he thought this had some connection with the presence of the larvæ.

Mr. Stainton observed that the larva of *Laverna atra* fed within the shoots of apple, but he could not say that the twig exhibited was infested by that species.

Mr. Stainton exhibited a drawing of a vine-leaf mined by the larva of *Antispila Rivillei*, and a bred specimen of the perfect insect, which had appeared on the 23rd of May last. He prefaced the exhibition with the following remarks:—

"The exhibition I am about to make is in many respects the most interesting I shall ever make in the course of my life: it seems to border upon the domain of prehistoric Entomology: we must go back, before the appearance of the first volume of De Geer's Memoirs, to a period little later than the conclusion of Reaumur's Memoirs, to find the last previous notice of the existence of this insect. That notice, in the form of a letter from Godeheu de Riville, a Knight of Malta, to the illustrious Reaumur, was printed *in extenso* in the first volume of the 'Mémoires de Mathématique et

de Physique, présentés à l'Académie Royale des Sciences' in 1750. A translation of this notice by Goeze appeared in 1755 in the fourth volume of the 'Naturforscher,' and Fuessly, who reproduced many of Goeze's notes on Lepidoptera in the second volume of his Magazine, in 1779, also repeated the notice of this insect.

"A period of seventy-five years then elapsed before any further printed notice appears having reference to this species, and it will be necessary therefore to point out the successive steps which have contributed to its rediscovery.

"In 1853, at the September meeting of this Society, Mr. Douglas exhibited some curious Lepidopterous larvæ mining in the leaves of dogwood; they were entirely apodal, and when full fed cut out oval cases from the mined blotches, and descended to the ground.

"In 1854, at the June meeting of this Society, Mr. Thomas Boyd exhibited the moth bred from the dogwood larvæ: it was *Elachista Treitschkiella*, a species first made known to us on the last plate of Fischer von Röslerstamm's beautiful work published in 1842.

"In October, 1854, I brought before this Society a short paper, in which I called attention to the perfect identity of habit of the vine-leaf miner recorded in 1750 and the dogwood miner lately bred, and, with the view of giving an impetus to the rediscovery of the vine-leaf miner, I proposed for it a name, *Elachista Rivillei*. At that time we had begun to consider these insects as abnormal *Elachistæ*; but it was Herrich-Schäffer who erected a separate genus for their reception—*Antispila*.

"In 1855, when visiting Paris for the first time, I brought the subject before the French Entomological Society, and gave a figure in the 'Annales' of the dogwood miner, thinking, as vines were grown so extensively in France, the attention of some French entomologist would thereby be drawn to the insect, and its rediscovery effected. In this, however, I was disappointed, and when Staudinger and Woeke's Catalogue first appeared, in 1861, the existence of my *Antispila Rivillei* was utterly ignored. There is nothing like a flat contradiction for stimulating a man to try and prove his point, and I must say I felt more determined than ever the insect should be found. Curiously enough, a ray of light came to us from across the Atlantic; for the late Dr. Clemens published, in 1860, in the Proceedings of the Academy of Natural Sciences of Philadelphia, notices of two species of the genus *Antispila*, of which he had found the larvæ in the leaves of vines.

"In 1869, in my volume on the Tineina of Southern Europe, I devoted an entire chapter to the history of this insect, and reproduced the original plate which had been published in 1750.

"In October, 1871, I received some of the larvæ of this insect from Massa di Carrara: these were sent me by Lady Walsingham, having

been found by her daughter, the Hon. Beatrice de Grey; it was from the larvæ then received that the figure of the mined vine-leaf I exhibit was made.

"In April, 1872, I heard from Lady Walsingham that a specimen of the perfect insect had emerged from the pupa, which gave me an indication to expect specimens myself shortly, for my pupæ had not had the advantage of spending a winter in Italy. On the 23rd of May the first specimen appeared: this I now exhibit: it is much smaller than *Treitschkiella*, and I am sorry to say that a second specimen, which appeared yesterday, is considerably smaller than this."

Mr. Higgins exhibited a series of beautiful species of *Cetoniidæ*, principally from Java, which he had recently obtained from Dr. Mohniki. The most striking species were as follows:—*Pryenia Vollenhoveni*, *Mohniki*; *Diceros Petelii*, *Buquet*; *Coryphæna gloriosa*, *Mohniki*; *Clinteria flavo-marginata*, *Wiedemann*; *Glycyphana picta*, *Mohniki*; *G. palliata*, *Mohniki*; *G. albomaculata*, *Mohniki*; *Eupœcila balteata*, *Vollenhoven*; and *Choleras-toma spondylidea*, *Mohniki*.

Mr. Jenner Weir stated that having recently planted many shrubs, of a variegated form, of *Rhamnus alaternus* in his garden at Blackheath, they were at once discovered by *Gonopteryx rhamni*, which deposited its ova upon them. He had not observed this butterfly in his garden for sixteen years, and considered it remarkable that the presence of the *Rhamnus* should have so soon attracted it, considering that this evergreen species was so totally unlike our two indigenous species in outward appearance.

Mr. M'Lachlan read the following communication which he had received from Prof. Alfred Newton:—

"Did you not long ago ask about birds eating dragonflies? Mr. S. S. Allen ('Ibis,' 1862, p. 360) says that the bottom of the chamber excavated by *Merops persicus* (*ægyptius*) was covered with the remains of dragonflies, mostly wings, upon which the eggs were deposited. In the common *M. apiaster* the eggs are said to be generally laid on handsfull of elytra and legs of *Coleoptera*, the *rejectamenta* of their meals: doubtless these dragonfly wings are the same, as, a few lines further on, he says he found them made into pellets."

Mr. Müller called attention to the following extract from the 'Times' of the 29th of May, respecting a plague of ants in the Island of May:—

"The Northern Lighthouse Commissioners have had a somewhat curious case presented to them for consideration and investigation. It appears that for some years past the emmets, or ants, have been increasing in number to a most enormous extent on the May Island, the property of the Lighthouse Board, and at present every part of the island is so infested with these little creatures as to render the land useless to the light-keepers. The myriads of

insects by their burrowing are also raising considerable hillocks. For the purpose of investigating the matter, with a view to adopt means to exterminate the insects, a party of gentlemen left Edinburgh on Saturday morning, and proceeded from Granton in the 'Pharos' to examine the state of the island. The steamer sailed at 9.30 A. M., and among the gentlemen who embarked were the Lord Provost, Provost Watt, of Leith, Bailie Miller, and Sheriff Fordyce, Commissioners; the professional gentlemen were Professors Sir R. Christison, Stevenson Macadam, MacLagan, Wyville Thomson, &c. Mr. D. Stevenson, engineer to the Board, was also present. When off Crail two gentlemen, said to have practical experience in such matters, were received on board, after which the steamer proceeded to the island, where the whole party landed and remained about two hours. The weather was extremely fine, and the sea being smooth there was no difficulty in landing from the boats. The steamer returned to Granton about 8 P. M. The result of the investigation has not yet been made known."

The Secretary read an extract from the 'Petites Nouvelles Entomologiques' of the 1st of June, respecting the occurrence of numbers of *Calosoma sycophanta* on the body of a man who had hung himself in a forest near Rheims. The corpse being in a state of putrefaction, it was considered probable that the *Calosoma* had been attracted by the odour, and it was suggested that the bodies of animals suspended in forests might prove traps for this insect.

The President called attention to a communication from M. Guenée, in the same journal, respecting *Spilosoma sordida*. Having bred a female, he awaited the appearance of a male in order to obtain a brood of larvæ. A male appeared, but it was a variety having the colours of the female, and during three days the sexes showed no desire to pair. At the fourth day a male of the ordinary colour emerged, and copulation took place even before its wings were fully dry. M. Guenée considered it a remarkable instance of the care which Nature exercises to maintain purity of race. But Mr. Stainton thought it more probable that the abnormally coloured male was incapable of continuing the species, and hence was neglected by the female.

Mr. Briggs alluded to the infertility which sometimes exists among insects; for instance, he once failed to obtain fertile eggs from three pairs of *Clostera curtula*. He further remarked on the intoxicating effects of "sugar" upon *Noctuæ*, in connection with the reproductive instinct, and observed that those insects when under its influence sometimes disregarded both species and sex in gratifying their amorous propensities.

New Part of 'Transactions.'

Part ii. of the 'Transactions' for 1872 was on the table.—R. M'L.

Memoirs of my Bird Cage. By EDWARD NEWMAN.

I HEARTILY wish that those who cultivate birds, so to speak, for their own delectation and that of their friends, would record their experiences, their failures, and their successes, for the benefit of others; and I may add, in doing this, the value of their lucubrations would be vastly enhanced if they will consider themselves addressing elderly aunts or pious grandmothers, and so introduce no word, or sentiment, or thought, for the purpose of diverting attention from the birds to themselves. There is an enormous amount of useful knowledge on birds and bird-keeping afloat, especially among ladies, but the larger moiety of this is lost through want of record; and the lesser moiety through the disposition to indulge in fine writing, and, shall I say it, the disposition also to attract attention to self rather than to the subject under consideration.

It is really astonishing how great and how general is the thirst for this very knowledge which is so abundantly possessed, yet so grudgingly or so injudiciously imparted. This combination of riches and poverty, of plethora and need, abundance and hunger, reminds me of nothing so much as the advertising columns of a newspaper: borrowers and lenders, men with too much money and men with too little, seem equally to abound, and absolutely to jostle each other in their struggles to obtain attention. How is it the borrowers and lenders cannot come together? Leaving these subtle questions for solution at some distant day, I would caution my readers against partaking too freely of *viva voce* advice, although given gratuitously. In the instance of the little parrakeets called betcherrygahs, grass-parrakeets, or warbling parrakeets (*Melopsittacus undulatus*), you will be certain to have this largely offered; and as I intend to commence the "Memoirs of my Bird Cage" with these little beauties, I have to caution my readers against the too free use of such stimulants. Everybody has seen and admired these little birds, and therefore everybody has a right to advise. "You should give them plenty of green food;" "you should keep them in a hot room;" "you should not give them hemp-seed;" "you should always keep a lump of sugar in the cage;" "you must take care to avoid draughts." Turn a deaf ear to all this, or politely inquire how long your kind adviser has kept the particular

kind of bird with whose habits and requirements he seems so familiar: that single question will often act as an extinguisher to the most liberal and communicative of *viva voce* advisers. But here I may state that even *printed* advice is not infallible, because it is often the result of too limited a number of observations. Take Mr. Keuleman's 'Cage Birds,' for instance, on the hawfinch, concerning which bird he writes with the pen of a master, as one who has a right to be heard, who sits in a Professor's Chair, as one who may ask "Have I not written it?"

"Hawfinches are often formidable companions in an aviary; the least annoyance makes it angry, and the smaller as well as the larger birds are treated with severe bites on the legs and neck. I possessed a very fine and large one, which was placed separately owing to its pugnacious inclinations. One day it succeeded in opening the door of its cage and flew about the room, perching on the cages of the remaining birds. In one corner of the room there was a large cage containing an American Baltimore-bird of similar irritable temper. I tried to capture the thick-beaked fugitive, as I had an impression that a severe fight was imminent if it settled on the cage, the more so as the Baltimore gave expression to notes of defiance, and made very suspicious movements. By driving the hawfinch from one spot to the other it settled on the cage, and *coups de bec* were at once exchanged. The most amusing part of the battle was that the hawfinch could not bring his large beak through the wires, and thus could not touch its rival, while, on the other hand, the Baltimore, with its long and slender bill, administered severe punishment upon the hawfinch's legs. The combatants were so much engaged that they did not see me approach, and I was thus enabled to catch the latter in my hand." —'Cage Birds,' p. 65.

I have possessed four hawfinches, each separately, and each in his turn died what is called a natural death—I believe by indulging too freely in hemp-seed; but it is of the character of the species I wish to speak; all my four hawfinches agreed in excessive timidity. Neither of the four at any time attacked any other inmate of the aviary, and the nearest approach to anything of the kind was one of them opening his huge beak, in an imbecile and helpless manner, when a hedgesparrow, alighting on the same seed-pan, began to feed close beside him: he of the great beak, like Bumble in *Oliver Twist*, was taken aback by the audacity of the

act. This merely shows how easily two observers, with equal opportunities for observation, may differ in their conclusions.

The most satisfactory birds I have ever kept are betcherrygahs and redpolls; the least so, quails and hawfinches: perfect content and uniform good spirits characterise the two former; painful timidity and restless anxiety to escape, the two latter. All the wagtails are pleasing inhabitants of an aviary, but they give you a deal of trouble; their food requires careful preparation, and individuals of the same species are too pugnacious for comfort, too apt to worry and even to kill their brothers and sisters; in elegance of form and grace of motion they are unsurpassed; the action of running, instead of jumping like sparrows, is very distinctive of wagtails. Tree sparrows have their bright side, but not very bright; they are cheerful, hardy and healthy, and breed freely, but their merits end there. Like their cousins of the gutter, they have an invincible determination to be known as thieves; they never take a crumb, or a grain of corn, but under the semblance of theft; they watch their opportunity to filch the selected morsel, and fly away with it to eat in secret; no sparrow will eat if he knows you are looking at him: town sparrow and country sparrow are alike in this; he casts a sidelong glance at the morsel he covets, and then a glance at your own eye, and so long as he sees that you are looking he is as grave as a judge, and as abstemious as an anchorite; but avert your eye for a moment, and the treasure is gone,—it has been carried to the most remote corner of the cage, there to be devoured in secret.

To return to my little parrots; I began on the 24th of March, 1871, with a single pair, male and female, the female being without a tail, and the male being partially denuded of feathers on his back, and almost wholly so on his sides. My cage is seven feet and a half long, five feet deep, twelve feet high at the back and ten feet high in front, with a slanting roof: there are two substantial parallel perches four feet apart and extending the whole length of the cage: the wall of the house forms the back of the cage; the wall of a neighbour's conservatory forms one side; the other side and the front are made of wire netting.

About a month after obtaining possession of the somewhat ragged couple I have described, I observed the amatory symptoms which precede breeding; and knowing the success that had attended the breeding of this species in the Zoological Gardens, I determined

to make an attempt. One after another I procured the husks of five cocoa-nuts; of course these had all been wrenched open to extract the nut, so in order to make them compact, each was restored to its original shape, and retained in that shape by means of a wire passed three or four times round it and strained tight. A hole, just large enough for the birds to go in and out, was made at one end: perhaps it will be better to show this by a diagram:

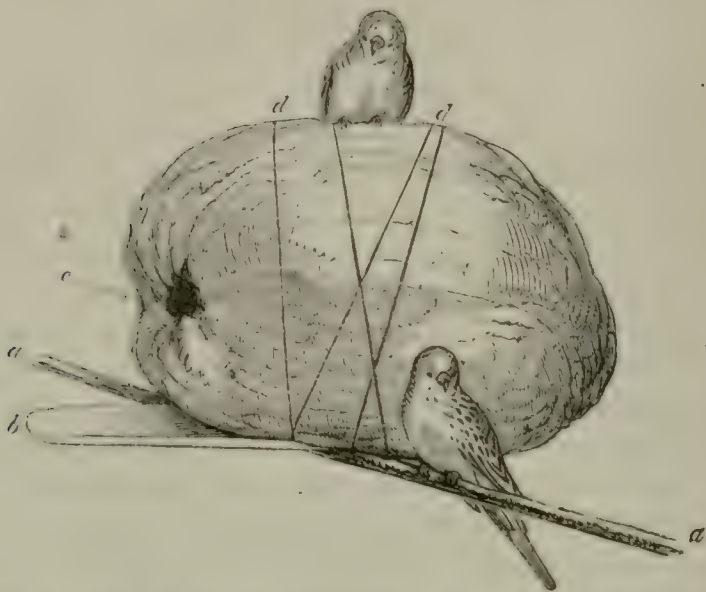


Diagram showing the nesting arrangement for Warbling Parrakeets: *aa* the perch on which the cocoa-nut husk is fixed; *b* the alighting-board; *c* the hole through which the Parrakeets enter the husk; *dd* wires binding the husk together in its original form.

the position of this hole is indicated by the letter *c*: a little foot-board was attached in front, much in the same manner as we arrange an alighting-board for bees in front of the hive; this is shown at *b*. When the arrangement was completed, all the husks were fixed at regular distances on the perch nearest the wall, and each was also fastened to the wall at the end.

As soon as the husks were fixed and the coast was clear, the little parrots perched on one of them, and not only perched on it, but crawled over it like mice, ascending one side by the joint assistance of beak and claws, and descending the other head foremost, in utter contempt of Sir Isaac Newton and the laws of gravitation. This was of course an inspection, not a government

inspection perhaps, but a most searching inspection; nevertheless, it was conducted in perfect silence and gravity, and evidently with a due sense of the responsibility incurred in this novel undertaking: at length the examination seemed to terminate in the approbation of the parties principally concerned, who formally took possession, the female venturing first into the interior, then turning round, and with her head and shoulders projecting through the hole she received the delicate attentions of her half-naked mate, who stationed himself on the foot-board, and commenced warbling in her ear his entire satisfaction with the whole arrangement.

A little altercation has on several subsequent occasions taken place between the parrots and the tree sparrows: these latter appeared to consider the new buildings erected for *their* accommodation, and to be jealous of all interference, a view of the case in which I by no means concurred; nevertheless they seemed determined to maintain the mastery, or at any rate they were for some time masters of the situation, and took possession of each husk in succession just as they pleased. This annoyed me greatly, but it has been my plan through life to allow matters to take their course until they became intolerable, and then to put a stop to whatever could be endured no longer. After a few days it was evident that the parrots had selected one of the husks as their peculiar property, and that they busied themselves incessantly about adapting it entirely to their requirements; one bird was incessantly inside, while the other was frequently observed making alterations in the entrance.

At length, on the 25th of May, the female seemed to be sitting close, for she rarely appeared outside her domicile, and only for a few minutes at a time, and then with her incipient tail bent, showing that it had taken the curve of the interior of her dwelling-place: the male was generally perched on the alighting-board; and while there he was perpetually uttering that gentle, almost ventriloquial warble which has suggested for the species the name of "warbling parakeet." A few dates of observation may here be given: they were written on the days on which they are dated.

June 6. When the female was off one or more young ones were seen in the nest: they were perfectly naked.

„ 25. Young ones partially covered with green were seen; still could not be counted.

July 5. A young one came out, entirely forsaking the nest.

July 7. Two young ones came out.

„ 9. A fourth young one came out.

„ 14. All four young ones sat huddled together on one of the perches, with their heads turned on one side and their faces pressed against the scapular feathers at the elbow of the wing: this attitude, so common with birds while roosting, is described as having the “head under the wing,” a feat which I believe it difficult for a bird to perform. This somnolent propensity gave me great anxiety, more especially as I never saw the parents feeding the little ones, and very rarely saw either of the little ones on the floor of the cage, where food was always provided for them, and this food the parents were continually visiting throughout the day: their good example was for awhile lost on their children.

It will be useless to relate here what ineffectual attempts I made to induce the little ones to feed: during the ensuing fortnight they gradually improved, and at length fed with their parents, but appeared to eat very little.

At the beginning of August there were renewed signs of love-making between the old birds; and always, when not receiving the amatory attentions of her partner, the female occupied herself in preparing her nest for a second brood; she seemed never tired of bringing little scraps of objectionable matter to the entrance-hole and dropping them on the floor of the cage; among other *rejectamenta* I observed two eggs, perhaps addled, but I had not witnessed the operation of ejecting them.

August 31. The female was evidently sitting, as she never made her appearance.

September 10. Both birds were out and flying about for at least an hour: I conjectured the eggs were hatched or possibly were forsaken.

„ 26. A young parrot left the nest.

„ 28. Two more young ones came out.

„ 30. A fourth young one came out.

October 2. A fifth young one came out: one was killed last night by a rat, of which I shall have more to say hereafter.

„ 4. A sixth young one came out.

„ 22. Love scenes again enacted between the old birds.

1872. February 9. I observed more young parrots in the nest, but failed in my attempts to count them: these are still the progeny

the original pair, as I know by the bright yellow of the forehead of the parents: other pairs are love-making.

April 18. A young parrot made its appearance; I found it slumbering with its head on one side, as is the parrot fashion after leaving the nest for the first time.

„ 25. A second young one appeared; he had frequently exhibited his head at the entrance-hole.

„ 28. A third young one came out, and on the same day one of last year's birds was found dead of lock-jaw, the point of the upper mandible being found fixed inside the lower one: this case is not singular; an exactly similar one came to my knowledge in 1869.

„ 30. A young parrot was found dead.

Three eggs were thrown out of the nest at intervals during the time this brood was making its appearance.

No memorandum was made for forty-nine days, although I was aware the old pair was breeding a fourth time.

June 18. Young parrots observed in one of the nests.

„ 30. Young parrots again observed, but still not counted.

July 5. A young parrot left the nest.

„ 7. A second left the nest.

„ 9. A third left the nest.

„ 11. A fourth left the nest.

„ 13. A fifth left the nest.

„ 15. A sixth left the nest.

All the young ones, as usual, moping and somnolent, but they seem very indifferent about feeding.

From these memoranda I deduce the following conclusions:—

1st. That the usual number of eggs laid by the species is six.

2nd. That the female usually laid, the eggs usually hatched, and the young ones usually left the nest, at intervals of two days; so that if the first egg were laid on the 1st of a month, the sixth would be laid on the 13th; and so also with the hatching and leaving the nest.

3rd. That the number of days required in incubation is about fifteen, but this is very uncertain, and requires more careful observation.

4th. That a full month usually elapses from the day of hatching to the day of leaving the nest.

I may add the following conjectural conclusions, which are the result of additional observations:—

5th. That the female sits all day. A rather careful series of observations on pigeons leads me to the conclusion that the female usually sits eighteen hours, including the night, and the male about six hours, always by day, that is, from 10 A.M. to 4 P.M. In like manner whether any relief is given by the males of these little parrots I have not ascertained, but I think not.

6th. Feeding the young seems to be performed much in the same way as in pigeons; the young ones push their little beaks between the mandibles of the old ones very nearly at the base, and there receive food which seems to have been prepared in the stomach of the parent and pumped up for this purpose; on no occasion did I see the parents take food from the pans, take it to the nest, and drop it into the mouths of the young ones, as is the usual manner of passerine birds. The parent parrots were fed a good deal on bread and milk, and I assume that this, after passing into the stomach of the parent, was disgorged for the use of the young; their other food is canary-seed, oats and hemp-seed, with occasional fresh grass-seed and groundsel.

The young parrots for some weeks after leaving the nest have the yellow forehead transversely barred with delicate dark lines, in the same manner as the crown and back of the head in adults.

These little birds possess every quality desirable in cage-birds: beautiful in colour, graceful in form, gentle and affectionate in disposition, subdued and pleasing in their song; in this latter respect totally differing from most other parrots. They delight in a swinging perch, and seem to enjoy swinging in every conceivable attitude, not unfrequently back downwards; on one occasion when one was swinging rather violently, another caught him by the tail, and thus united they swung together. Nothing can be imagined prettier than their love-making; the billing and cooing of pigeons must yield to it, but I think the prettiest sight is when one gently scratches the poll of another with the extreme point of his beak; the female, which sex is generally honoured by this attention, closing her eyes, bending down her head, and appearing to be in the very plenitude of enjoyment.

But I hope to find time as well as space to return to my Bird Cage again and again.

EDWARD NEWMAN.

Ornithological Notes from North Lincolnshire.

By JOHN CORDEAUX, Esq.

(Continued from S. S. 3098.)

MAY AND JUNE, 1872.

Swift.—May 6th. First seen, a pair.*Whimbrel*.—May 15th. There were many very large flocks of whimbrel on the pastures in the Stallinborough Marshes this morning; altogether I must have seen several hundred birds. They feed on the common earth-worm, as well as on various species of Coleoptera and other insects.*Common Sandpiper*.—May 15th. First seen, a very late appearance.*House Martin*.—May 16th. First observed: are very numerous with us this year. I have counted eight pairs about some farm-buildings, where for some years we have only had one or two pairs at most, and I see two have commenced a nest under one of the spouts of my house, where they have not nested for many years.*Garden Warbler*.—May 18th. Wind W.S.W. First seen and heard.*Spotted Flycatcher*.—May 21st. Wind W.S.W., very warm and fine. First seen.*Whimbrel*.—May 22nd. Last seen.*Common Scoter*.—May 25th. Observed two, a mature male and female, swimming together off our creek.*Gray Plover*.—May 25th. Last seen, about ten, mostly old birds in full breeding garb.*Fern Owl*.—May 27th. I flushed a pair of fern owls from an open boggy place in one of the plantations. They are very rarely seen or heard in this district. One of these birds was larger than the other, having the white marks on the primaries and outer tail-feathers characteristic of the male. The smaller of the two was dark altogether: this last perched crosswise for some time on a bough within a few yards of me. They flew in a very bewildered manner, evidently much incommoded by the bright sunshine.*Nightingale*.—May 29th. Heard the nightingale singing.*Peewit*.—June 15th. Peewits are now in flocks, young and old; saw upwards of forty together.

Brownheaded Gull.—June 22nd. I saw several young brown-headed gulls, birds of the year, on the flats this afternoon. These gulls are now returning daily with their young from the great nesting-station on Twigmoor, near Brigg.

Peewit.—June 23rd. Some peewits are still nesting. I found a small creature this morning, and another or two on the 25th, which had only just left the shell.

Blackheaded Bunting.—June 27th. This afternoon I found the nest of the blackheaded bunting, containing young just hatched, on a broken mass of reeds and sedges in a marsh. The nest was placed on the bending reeds and slightly woven in with them. The old bird feigned lameness, and tumbled about in an extraordinary manner as she left the nest. The young of willow wrens, tree pipits, garden warblers, sedge warblers and whitethroats are now numerous in our plantations.

JOHN CORDEAUX.

Great Cotes, Uleeby, Lincolnshire,
June 27, 1872.

Erratum.—In my Notes in the June number of the 'Zoologist,' S. S. 3097, second line, for "their young, often leaving the nest" read "their young after leaving the nest," omitting the comma.—J. C.

A few Ornithological Notes made in Devon and Cornwall during June, 1872. By JOHN GATCOMBE, Esq.

Yellow or Ray's Wagtail.—June 6th. I was glad to find the yellow or Ray's wagtail breeding in the neighbourhood of Plymouth. I watched both male and female with food in their mouths, anxiously awaiting my departure before venturing to feed their young, which were evidently not far off. For a week or two only, on the first arrival of this species in spring, small flocks may annually be seen in our meadows and marshes, but on their return in autumn their numbers are greatly increased; large companies, composed chiefly of young birds of the season, with their parents, may then be observed in meadows, marshes, fields, and even on the cliffs all along the coast, just before their departure for the winter. I have occasionally noticed that the plumage of some few of these young birds does not show the slightest tinge of the usual light yellow colour on any part of the body, the whole being something between

that of the titlark and sedge warbler, the almost pure white line surmounted by a dark one above the eye, giving the head a great resemblance to that of the latter bird, and I have wondered whether they could possibly be the young of some other species—the gray-headed, for example (if there be any difference between the young of the two)—or only in the first plumage of a late brood of Rayi.

Puffin, Buzzard, Nightjar, Kingfisher.—June 7th. A puffin has just been brought in by some fishermen, which got “meshed” in their net: it was, I think, a young bird of last year, the bill being rather small and the cheeks dusky. Puffins are not at all common near Plymouth, and do not breed in the neighbourhood. A fine old common buzzard was brought into the town to-day, killed in the neighbourhood, and offered for sale at sixpence, but no purchaser found, I believe. Also a brood of young kingfishers, I am sorry to say, which soon died from neglect. Nightjars seem to be plentiful in our neighbourhood this season, as I have heard several in the neighbourhood of Bickleigh Vale.

Herring and Lesser Blackbacked Gulls.—I am very happy to observe and record the good effect produced by the Sea-bird Act on the Devon and Cornish coasts. Herring gulls are breeding plentifully at the Rhame Head, near Plymouth, and a few days since I watched with a telescope a flock of more than one hundred and thirty herring and lesser blackbacked gulls, in adult and immature plumage, resting on the “West Mud,” mostly lying down, but a few feeding; also a host of others flying about the harbour at the same time; and whilst I am writing this I can see from my window an extraordinary “play” of gulls, consisting of three or four hundred, hovering in a mass close over a shoal of fish in the harbour, then suddenly dashing down, and in their eagerness apparently settling on each other’s backs in the water. A week since I visited Dartmouth, going down the river from Totnes, and from thence walked to Berry Head, Torbay, where I was pleased to find a great number of herring gulls breeding, and in some instances could see the young ones running about and standing at the edges of the holes and fissures in the cliffs eagerly waiting to be fed by the old ones, which appeared in a great state of alarm and anxiety, circling close over my head and making the place resound with their incessant cries. One large rock, I suppose half a mile from the shore, was almost white with herring gulls. There were also several cormorants on other rocks, drying or expanding their wings, one of

which had a pure white breast, which looked very conspicuous among the rest; but I have before remarked such birds, especially in summer. There were a great many swifts and martins flying above the cliffs, on the precipitous faces of which I expect they breed, as they do at Seaton and Beer Head between Sidmouth and Lyme Regis, further to the eastward. I have not yet seen any young gulls on the wing, but in August no doubt we shall have plenty in our harbours and estuaries. Whilst on the subject of herring gulls, I may here mention that some years ago a friend of mine, when trying with some others to procure gulls' eggs at Wembury, near Plymouth; at length, with great difficulty, managed to get a nest containing two, but on bearing them away a small melancholy voice seemed to haunt and follow him, though he could not conceive from whence it came, when at length, to his great surprise, he found one of the eggs cracked and the bill of a little bird protruding. On getting to the boat he immediately released the chick from the shell, wrapped it carefully up, and putting it inside his waistcoat, close to his "buzzom," brought it home, and actually succeeded in rearing it to a fine full-grown bird, afterwards sending it to a friend, I think, in Manchester. This is indeed a fact, as I had often heard of the bird before it was sent away from Plymouth, and fully intended going to see it. Having heard instances of tame gulls confined in the Zoological Gardens, Regent's Park, for many years, being in the habit of flying away and returning again after some months, I will relate a similar fact concerning a herring gull at Ivybridge, near Plymouth. Some years since a lady observed a gull on a kind of island in an ornamental pond on the lawn before the house, and, thinking that the poor bird looked miserable and hungry, kindly threw some meat to it, which was instantly devoured, and from that time to the present the gull remains warmly attached to the place, leaving it sometimes for a few weeks together for the sea-coast, which is only a few miles distant, but always returning again, looking to be fed; and, strange to say, the lady told a friend of mine that it never stayed away longer in the breeding-season than at any other time. My friend, who saw the bird a few weeks since, said that it was a fine herring gull, in full summer plumage.

Blackheaded Bunting, Ring Ouzel, &c.—June 16th. Visited the "Cheesewring" on the Cornish Moors. Observed several ring ouzels among the rocks, and some blackheaded buntings breeding in the marshes, where I also met with a great many of the greasy

tritillary (*Melitæa Artemis*). Heard several cuckoos uttering that peculiar note which they often do in June. I had almost forgot to mention that when coming down the River Dart I observed a great many herons, no doubt belonging to the heronry in the magnificent woods of Sharpham: there were also a great number of ring doves in the salt marshes by the river side.

J. GATCOMBE.

8, Lower Durnford Street, Stonehouse, Plymouth,
July 4, 1872.

Wild Indian Elephants in Days of Yore.

By EDWARD BLYTH, Esq., F.L.S.

IN the 'Zoologist' for July (S. S. 3104 *et seq.*) I called attention to the former extension of the range of *Rhinoceros sondaicus* in Northern India, and mentioned (on the authority of the Moghul Emperor Báber) that wild elephants also occurred over extensive districts where at the present time they are utterly unknown. I now think that it will interest zoologists to quote from Dr. W. W. Hunter's 'Annals of Rural Bengal' the following account of the depredations of tigers and of wild elephants in the province of Beerbhoom towards the close of the last century, at a time subsequent to the fearful ravages of the great famine of 1770, when "before the middle of the year ten millions of the general population had perished;" and "at the end of it, an official reports that of a certain poor class—the lime-workers—only five out of one hundred and fifty were living, and one-third of the country had returned to jungle." (*Op. cit.* p. 53.)

"As the little rural communities relinquished their hamlets, and drew together towards the centre of the district, the wild beasts pressed hungrily in their rear. In vain the Company offered a reward for each tiger's head, sufficient to maintain a peasant's family in comfort for three months; an item of expenditure it deemed so necessary, that when, under extraordinary pressure, it had to suspend all payments, the tiger-money and diet allowance for prisoners were the sole exceptions to the rule. A belt of jungle, filled with wild beasts, formed round each village; the official records frequently speak of the mail-bag being carried off by wild beasts; and after fruitless injunctions to the landholders to clear the forests, Lord Cornwallis was at length compelled to sanction a

public grant to keep open the new military road that passed through Beerbhoom. The ravages of the wild elephants were on a larger scale, and their extermination formed one of the most important duties of the collector for some time after the district passed directly under British rule. In two parishes alone, during the last few years of the native administration, fifty-six villages with their communal lands 'had been all destroyed and gone to jungle, caused by the depredations of the wild elephants;' and an official return states that forty market-towns throughout the district had been deserted from the same cause. The Rajah petitioned the Company to use its influence with the Rajah of Bengal to procure the loan of the Viceregal stud of tame elephants, in order to catch the wild ones. The bag was to be made over to his Highness as payment. This assistance not being obtained, the Rajah formally applied for a reduction of the land-tax, in consequence of the district being depopulated by wild elephants. The collector reported the claim to be just. 'I had ocular proof, on my journey to Deoghur,' he writes; 'marks of their ravages remaining. The poor timid native ties his cot in a tree, to which he retires when the elephants approach, and silently views the destruction of his cottage, and all the profits of his labour. I saw some of these retreats on my journey, and had the cause of them explained. In Bealputta very few inhabitants remain; and the Zemandar's fears for the neighbouring pergunnahs will certainly be realized in the course of a few years, if some method is not fallen on to extirpate those destructive animals.'

"It is difficult," continues Dr. Hunter, "for Englishmen, accustomed from boyhood to fire-arms, to comprehend the defenceless state of a peasantry armed only with spears and bows against the larger sorts of wild beasts. It is not lack of courage, as any Englishman who has hunted with beaters in the jungles will testify. Indeed, the intrepid skill with which a band of Beerbhoom hill-men surround a tiger, never ceases to astonish those who know the risk. But the herd of elephants is resistless; lifting off roofs, pushing down walls, trampling a village under foot, as if it were a city of sand that a child had built upon the shore. 'Most fortunately for the population of the country,' wrote the greatest elephant-hunter of that period, 'they delight in the sequestered range of the mountain; did they prefer the plain, whole kingdoms would be laid waste.' In many parts of the country the peasants

did not dare to sleep in their houses, lest they should be buried beneath them during the night, and as late as 1810 the surveyor of a district a little to the north of Beerbhoom reports:—"The alarm that the elephants occasion is exceedingly great. One night that I lay close to the hills, although I had a guard, the men of the village close by my tents retired at night to the trees, and the women hid themselves among the cattle, leaving their huts a prey to the elephants, who know very well where to look for grain. Two nights before, some of them had unroofed a hut in the village, and had eaten up all the grain which a poor family had preserved in its earthen store." It is right to add, that wild elephants, although they may have become more troublesome as the jungle absorbed the cultivated land after the famine, were dreaded devastators long before 1770. Even in the most prosperous period of the Mussulman race they infested what are now the richest districts of Bengal, and formed the chief, sometimes indeed the sole, revenue that could be obtained from large and fertile provinces.

"The evil seemed to have reached its climax about 1786. From this year English supervision, more or less direct, dates in Beerbhoom. The agriculturists were by no means the only class who fled before the tiger and wild elephant. The earliest English records disclose the forest hamlets of the iron-founders deserted; the charcoal-burners driven from their occupation by wild beasts; many factories and market-towns abandoned; the cattle trade, which then formed an important branch of the district's commerce, at a stand; and the halting-places, where herds used to rest and fodder on their way from the mountains to the plains, written down as waste."

Less than a century of British rule has elapsed, and wholesale robbery by banditti and other gigantic evils have become tales of the past. "The names of Singh-bhum (lion-land), Sher-ghár (tiger-town), Sher-ghátti (tiger-ford), Shikár-par (hunting-hamlet), stand as scarcely recognized memorials of the days when the margin of cultivation receded before wild beasts. * * * Nor has the change been less marked with regard to wild animals. It is now impossible to find an undomesticated elephant, and very rarely possible to hear of a tiger throughout the length and breadth of the district. The last tiger hunt took place in May, 1864. A band of hill-men, in number about five hundred, beat many square miles of jungle, but not a bear or a leopard, much less a tiger or an elephant,

could they turn out. The largest thing we saw," remarks Dr. Hunter, "was a small spotted deer. Bears and leopards still survive in the recesses of the woods, but they never trouble the inhabitants, and their capture is as much an event as the shooting of an eagle in the Scottish Highlands."

Captain Burton, in his 'Goa and the Blue Mountains' (published in 1851), mentions that the Madras Government at that time, as for many years afterwards, gave a reward of £7 for every slaughtered full-grown elephant, and £5 for every young one. But when the reward was claimed the tusks had to be given up, though tuskers were comparatively few in number. They have now been killed off to such an extent in the Madras Presidency that wild elephants are there no longer permitted to be slain, except by procural of a Government license, the cost of which is prohibition except to a few; for tame elephants are as much as ever in request, and it has not been found to pay to breed and rear them in a state of domesticity.

E. BLYTH.

Animals of Orissa. By EDWARD BLYTH, Esq., F.L.S.

IN his two volumes on the province of Orissa (1872) Dr. W. W. Hunter only slightly notices the more conspicuous animals indigenous to that part of India, in three of his appendices; but except to a naturalist of Indian experience the local names which he employs in many instances carry no sort of information, nor can I refer them in every instance to their proper species, although for the most part familiar with the ordinary Bengali and Hindustâni appellations.

In his "Statistical Account of Puri," under the head of "Animal Kingdom," he informs us that—"In the open part of the country the larger beasts have been pretty nearly exterminated. Of the following list several are now becoming rare:—Tigers, leopards, bison [*i.e.* gaour, *Bos gaurus*, often miscalled "gayal" by sportsmen in the province], wild cows [*i.e.* nil-gai, *Portax pictus*], hyenas, bears, and pigs, wild dogs [*Canis rutilans*], antelopes, sambur-deer, hog-deer and kurangas (small deer) [doubtless meaning the char-singhá, *Tetracerus quadricornis*]. Alligators [*i.e.* crocodiles] swarm in the lower part of the rivers. The sum spent in keeping down tigers and leopards does not exceed £5 a

year. The number of deaths from wild beasts and snakes formally reported to the police amounted to ninety-three in 1869. Among pythons are the ajagar and akirej. [The Python molurus is the only true python known to inhabit India with Ceylon, while on the eastern side of the Bay of Bengal the *P. reticulatus* (unknown in India) is the prevalent species.] Among deadly snakes are the black cobra (Kentá) [*Naja tripudiens*, var.], the tampá [?], the gokhura [?], and the spotted slow-killing borá [?]. The nág is the general name for a variety of serpents. Among smaller wild beasts are jackals, foxes [*Vulpes bengalensis*], hares [*Lepus ruficaudatus*], monkeys of many sorts [surely only two species, *Inuus erythræus* and *Presbytes Entellus (verus)*!], porcupines, and squirrels in immense numbers [the little striped *Sciurus tristriatus*]. Among land birds are the pea-fowl, the jungle fowl [*Gallus ferrugineus*], partridge [*Ortigornis ponticeriana*], golden plover [*Charadrius longipes*], ortolan [*i.e.* short-toed lark, *Calandrella brachydactyla*, which is commonly recognized as the "ortolan" by Anglo-Indians], dove [various], green pigeon [*Treron chlorogaster* and *T. bicinctus*], owl [various], eagle [ditto], hawk, kite, crow and jay [meaning roller, *Coracias indica*], besides the ordinary kinds of smaller land-birds. On the Chilka lake are found the flamingo, wild goose [*Bernicla indica* chiefly], Brahmani duck [*Casarca rutila*], wild duck of various sorts, teal (báli hánsa), snipe, panikaa [?], crane [*Leptoptilus javanicus* being probably meant, although three species of true crane, *Grus Antigone*, *G. cinerea* and *G. Virgo* abound in the province as winter visitants], and gaganblee [*Ciconia leucocephala*?]. Of paddy-birds the five following sorts are the most common: the kantiyábag [*Ibis melanocephalus*?], the dhálá [surely not the dál-pipi, Parra, 2 sp.?], the rám [rám-sálik, *Xenorhynchus australis*?], the kuji [?] and the tór [?]. The interpretation of most of these local names for unquestionably well-known birds is vainly sought in Jerdon's 'Birds of India.' The appellations bestowed, however, on twenty-three species of fishes I mostly recognize, but the systematic names of these are hardly worth supplying here, as practical ichthyologists will not find much difficulty in determining them, by reference to Russell's 'Fishes of the Coromandel Coast' and other works, supposing that different species are not called by the same name (as often happens) in different localities.

In his "Statistical Account of Balasor," under the head "Wild Animals," Dr. Hunter enumerates—"The wild elephant, very rare; tiger, rare; wild buffalo, common; black bear [*Melursus labiatus*], chiefly in north of the district; leopard, hyena, elk [*i. e.* sâmur or sambur], blue cow (nil-gái), spotted deer, antelope, hog-deer, mouse-deer [*Memina indica*], wild dog, wild cat [*Felis chaus*], civet cat [*Viverra zibetha*] and hare [*Lepus ruficaudatus*]. Among birds, the pea-fowl, jungle-fowl, black partridge [*Francolinus vulgaris*], red partridge [surely *Ortygornis ponticeriana*, sometimes termed "red-leg"], quails of two sorts [*Coturnix communis* and *C. coromandelianus*], snipe, golden plover, wild ducks and wild geese." Of fresh-water fishes, the names of twenty-three species (not "varieties"), and of salt-water fishes those of nineteen species are supplied.

Lastly, in his 'Statistics of Cattack District,' under the heading of "Wild Beasts," Dr. Hunter enumerates—"Tigers, bears, leopards, wild buffaloes, antelopes, spotted deer, hog deer, hyenas, jackals, foxes and pigs; fish-eating and man-eating alligators [*i. e.* ghavials and crocodiles] abound in all the rivers and creeks, and grow to a very large size. Comparatively little loss of life is caused by tigers and leopards, as these animals are confined chiefly to the dense jungles on the coast, or in the hilly portion of the district, where the population is sparse, and where the deer and pigs supply them with sufficient food. The loss of cattle reported to the authorities from wild beasts is very trifling. In 1840 the rewards paid for the destruction of wild animals amounted to £9 5s.; in 1860, to £6 13s. 6d.; and 1869, to £1 for wild animals, and £3 for alligators. Previous to the latter year no rewards had ever been given for snake-killing. The reported loss of life from snake-bites, wild beasts and alligators in Cattack district, during the five years ending 1869, is as follows:—Snake-bites, 741: wild beasts, 470: alligators, 250,—total 1461; but the actual loss probably amounts to twice that number. The small game includes hares, pea-fowl, jungle-fowl, double-spurred fowl [*Galloperdix lunulata*], black and gray partridges, many kinds of duck and teal, bar-necked geese, common green pigeon [Treron], and several kinds of doves. No trade worth mentioning is carried on in wild beast skins: nor are the forest animals made to contribute towards the wealth of the district."

Whenever "wild cows" are noticed in the Indo-Chinese and

Malayan countries, the *Bos sondiacus* is the species sure to be intended; but "wild cow" in Orissa can only refer to the nilgái, which moreover is not otherwise indicated as inhabiting the Puri district, though well-known to occur there. Since the publication of the late Dr. Jerdon's useful 'Mammals of India' and 'Birds of India,' and with the facilities for identification which are offered by the Government Museum of Natural History in Calcutta, there is surely no reason why the common mammals and birds of any part of India should not be designated intelligibly to non-Indian readers who happen to feel an interest regarding them.

EDWARD BLYTH.

N.B. — The additions within editorial brackets are Mr. Blyth's.—*E. Newman.*

Notices of New Books.

An Exposition of Fallacies in the Hypothesis of Mr. Darwin.

By C. R. BREE, M.D., F.Z.S. London: Longmans, Green & Co. 1872.

THE expositors of 'Fallacies in the Hypothesis of Mr. Darwin' may be divided into three sections:—1st. Teachers of the Christian religion, who clearly see that if Mr. Darwin's views are established as *true*, their own teaching must be *false*, and their occupation gone; for, as Mr. Mivart expresses it, "No one can at the same time accept the Christian religion and deny the dogma of Creation": their name is Legion. 2nd. Naturalists who have antagonistic hypotheses to support, and of whom I consider Mr. Mivart an illustrious, and myself a very humble, example: we are very few. 3rd. Authors of reputation who seek to support that reputation by a display of argumentative powers and forcible writing. Dr. Bree is an excellent example of the third section, and may fairly claim to be considered as its leader, for he has long since published a volume of the same import, under the title of 'Species not Transmutable': the present work appears to me in reality a second and elaborate edition of the first, and I fail to see any advantage in the new title, more especially as it seems to prejudge the whole question by assuming that there are "fallacies" to be "exposed," which I think is really the question to be discussed:

his style is at once elegant and forcible, and independently of the rather too ostentatious assumption that he, Dr. Bree, is right, and Mr. Darwin wrong,—a matter that I rather prefer to consider *adhuc sub judice*,—will be read with pleasure by those who agree with the writer. Being one of these,—entirely agreeing with Dr. Bree that there are “fallacies” in Darwinism, although I think it our duty to demonstrate rather than to assume this,—I have selected a passage which I think the best and most comprehensive in the volume before me. The reader will please to observe that I by no means assert that either the passage or the book exactly meets the case, for I think that, after both have been studied with care and with candour, Darwinism will remain for the present much where it is now.

“As far as I am concerned, I would gladly accept any sound explanation of the *modus operandi* of God in Creation. My own opinion is that such knowledge is beyond the limits of human reason. That as we cannot realise a spiritual existence because we cannot compare it, so do I believe that the operations of Divinity are incomparable, and consequently that we cannot realise with our limited reason the incoming of species into the world. I place the grand event of man's existence in the world in the same category of thought as the termination of space, the beginning and end of time, the indivisibility of matter, and the true nature of gravitation; and while I admit and cherish the most extreme and recondite investigations into the hidden mysteries of nature, I deny the right of any man to deal with such questions upon mere assumptions, illogical bases, and unsound deductions. ‘The system of Darwin is eminently illogical, and must fall.’ It is an hypothesis which draws large but unsound deductions from the rare and abnormal deviations, leaving the real field untouched and unexplored. It is founded upon the exceptions, not the rules, of nature. It is utterly opposed to design, to the teachings of animal mechanics, to the grand and beautiful and everlasting proofs upon which the teleologist loves to dwell. It is a cold, unsound, unphilosophic, degrading system of assumed probabilities, which, if true, would be ten times more wonderful than anything assumed or believed by the most strict and rigid disciple of special creation. Nay, still further, if proved in every point to be true, it would still leave the fact of special creation in all its wonderful mystery. The organic cannot be formed from the inorganic; nor could the organic, if it were so formed, be endowed by any physical force with the laws and properties of LIFE. Go on still in speculation, and I ask, whence the inorganic—its beginning, its ending, its grand and inexplicable laws—which the physicist in vain attempts to correlate with the vital? whence

gravitation, and what? the sidereal system, and its movements? the SPIRIT, that breathes through illimitable space, and lives through an eternity of time?

“The very grandeur of the subject, too vast to contemplate, would be a sufficient answer to the puny efforts of man to solve the great problem and mystery of existence; while the mathematical certainty attached to all that is known of astronomy makes it quite certain that the details of life on one speck of the universe are not left to mere chance, or the destruction of the weak by the strong, resulting in what is termed the ‘survival of the fittest.’ The chance operation of force in the production of abnormalities in nature is distinctly answered by the fact that all force is guided. The earth, as is beautifully expressed by Professor Haughton, is a geometer, because she forms within her the five typical geometrical forms which a geometrician alone could make. The animal frame is formed upon a plan which is altered to suit circumstances of existence, and is brought into being by the Power which directs the forces of nature. How, man is not permitted to know, inasmuch as his intellect is limited. His reason cannot solve mysteries which by their very nature it cannot compare. The finite can only reason out the infinite by inductions drawn from its own incompetency. Meanwhile, let us remember that the deep investigations of a truly philosophic mind will be directed rather in unfolding the productions of nature than in dogmatising upon the ‘how’ and the ‘why’ such productions are formed. Take away from our studies the charm that this ‘how’ and this ‘why’ are the workings of a Power which is reasoning, adaptive, infinite in knowledge, in power and in existence, and science becomes a dark, repulsive pursuit, which must end in its own destruction and the extinction of all theistical belief.”—P. 184.

There are many such passages as this, which I have quoted without alteration or abbreviation, and I acknowledge it leaves on my mind an unsatisfied feeling. I cannot say to the author *rem acu tetigisti*, “there thou hast Mr. Darwin on the hip”; but I can say, “Thou hast written a passage that reads well and pleasantly, still I do not see exactly how it serves to support the case which we desire to make out.” I do not say that this feature in the discussion is confined to the labours of Dr. Bree. Delighted with Mr. Darwin’s volumes, particularly the last on the ‘Origin of Man,’ if I may so call it in contradistinction to the more general title ‘The Origin of Species,’ I have read on and on, and have been obliged to ask, *Quo tramite tendis?* “Do thy multitudinous facts, which follow one another like the waves of the ocean, leave any more impression than the waves themselves make on the surface of the

sea? Do they advance one jot or one tittle the hypothesis thou hast propounded, that man was not created but evolved from an ascidian?"

This great question, combined with another, Whether our tendency is progressive or retrogressive, has been handled with greater skill by a third writer, with whose name I am unacquainted, and I wish particularly to invite attention to the concluding paragraph of the passage I am about to cite. We have throughout only to substitute the word "ascidian" for the word "frog," and we shall find the present discussion was anticipated seven thousand years ago without being brought to any definite or satisfactory conclusion.

"Pardon me," answered Aph Lin; "in what we call the Wrangling or Philosophical Period of History, which was at its height about seven thousand years ago, there was a very distinguished naturalist, who proved to the satisfaction of numerous disciples, such analogical and anatomical agreements between an An [man] and a frog as to show that out of one must have been developed the other. They had some diseases in common; they were both subject to the same parasitic worms in the intestines; and, strange to say, the An has in his structure a swimming bladder, no longer of any use to him, but which is a rudiment that clearly proves his descent from a frog. Nor is there any argument against this theory to be found in the relative difference in size, for there are still existent in our world frogs of a size and stature not inferior to our own, and many thousand years ago they appear to have been still larger."—*'Coming Race,'* p. 138.

"In the Wrangling Period of History, whatever one sage asserted another was sure to contradict. In fact, it was a maxim of that age, that the human reason could only be sustained aloft by being tossed to and fro in the perpetual motion of contradiction; and therefore another sect of philosophers maintained the doctrine that the An was not the descendant of the frog, but that the frog was clearly the improved development of an An. The shape of the frog, taken generally, was much more symmetrical than that of an An; besides the beautiful conformation of its lower limbs, its flanks and shoulders, the majority of the Ana [men] of that day were almost deformed and certainly ill-shaped. Again, the frog had the power to live alike on land or in water—a mighty privilege partaking of a spiritual essence denied to an An, since the disuse of his swimming

bladder clearly proves his degeneration from a higher development of species. Again, the earlier races of the Ana seem to have been covered with hair, and even to a comparatively recent date hirsute bushes deformed the very faces of our ancestors, spreading wildly over their cheeks and chin. But the object of the higher races of the Ana, through countless generations, has been to erase all vestige of connection with hairy Vertebrata, and they have gradually diminished that debasing capillary excrement by the law of sexual selection; the Gyei [women] naturally preferring youth, or the beauty of smooth faces. But the degree of the frog in the scale of the Vertebrata is shown in this, that he has no hair at all, not even on his head. He was born to that hairless perfection which the most beautiful Ana, despite the culture of incalculable ages, have not yet attained."—*Id.*, p. 139.

"And do no wranglers or philosophers now exist to revive the dispute; or do they all recognize the origin of your race in the tadpole?"

"Nay, such disputes," said Zee, with a lofty smile, "belong to the Pah-bodh of the dark ages, and now only serve for the amusement of infants. When we know the elements out of which our bodies are composed, elements common to the humblest vegetable plants, can it signify whether the All-Wise combined those elements out of one form more than another, in order to create that in which He has placed the capacity to receive the idea of Himself, and all the varied grandeurs of intellect to which that idea gives birth? The An in reality commenced to exist as an An with the donation of that capacity, and, with that capacity, the sense to acknowledge that, however through countless ages his race may improve in wisdom, it can never combine the elements at its command into the form of a tadpole."—*Id.*, p. 143.

Seeing that we shall never know whether we are descended from Mr. Darwin's ascidian or more recently from his "hairy quadruped furnished with a tail and pointed ears," or whether such a being may hereafter descend from us, I think the question may be safely left open "for the amusement of infants."

EDWARD NEWMAN.

Le Troglodyte de Mentone.—This fossil man, so called, was discovered by Dr. E. Rivière, who has been lately appointed by the French Government to examine and study the palæontology and prehistoric period of Liguria.

After obtaining an immense quantity of bones and teeth of bears, gigantic stags, hyænas, rhinoceros and other animals from the neighbouring quarries, Dr. Rivière commenced the exploration of the cavern of Baoussé-roussé, situated on the Italian frontier and on the line of railway from Mentone to Vintimille. This skeleton was found beneath a layer of earth several yards in thickness, and is in a very fine and remarkable state of preservation; it is entire, with the exception of the ribs, which have been broken by the weight of superincumbent earth. The teeth and lower jaw are in a good state of preservation: the legs are crossed in a natural position, and the arms folded near the head, seeming to imply that the man died in his sleep and was carefully covered over without disturbing the earth beneath. Round the skeleton were found a great quantity of stone implements, as scrapers, chisels and axes, and also bone needles, the form of which seems to have been produced by their having been rubbed down on some hard substance. Mr. Nicholl, who has examined the cave, thinks this a case of burial, certain stones at the back and front being so placed, by design, as if roughly to mark the place of sepulture. These particulars are from the 'Popular Science Review' for July, 1872, p. 283.

White Badger.—White badgers have occasionally been seen, and amongst some hundreds of badgers that I have seen and taken out I have observed this freak of nature two or three times only. As far as I know, this colour of hair has always been attributed to the advanced age of the animal. This, like many other plausible theories, however, requires proof, and from the following instance we may conclude that it is not always the effect of age. A few days since, I took from an earth an old sow badger and young ones, suckers, one of which is white. I inclose cuttings of hair from the back of the white one, and also from its dark brother, which is of the usual colour. Amongst the various opinions as to the singular colour of it, the most novel was that of a well-known breeder of game terriers, who, in confidence to the anxious inquiries of a very knowing farmer, replied, "I expect the old badger somehow caught a glimpse of my young Fury, and, thinking it was old Fury, returned got frightened, and so marked the baby."—"Cornubia" in the 'Field' newspaper.

White Badger.—In reference to the records that have appeared concerning the occurrence of white badgers, and the theory that the whiteness is due to great age, Mr. F. H. Salvin thus writes in the 'Field' of July 20th:—"Many years ago a full-grown male badger escaped from a person whom I knew, and took to an earth in a wood some ten miles off. There were no badgers in the neighbourhood, and this animal lived there by himself for fifteen years, when he was found dead at the mouth of the hole. I cannot say how old he was when he got away, but, from his skull (which I have before me) and the state of his teeth, he clearly died of old age, and his fur was of the usual gray and black colour. At a future time I hope to give

you some details about this curious animal. Being the owner of a remarkably tame one (a mature male), I am very anxious to obtain a female, which I should also like to be tame, my object being to settle the period of gestation. Perhaps 'Cornubia' will kindly assist me."—*F. H. Salvin; Whitmoor House, Guildford, July 11, 1872.*

Anecdote of a Rat.—The following incident has been communicated to me by a gentleman in this neighbourhood, on whose accuracy I can fully rely:—"On the 7th of June, at about 8.30 A. M., two men were working in a stable-yard, when they suddenly heard a lamentable squeaking, which they soon found to proceed from a rat that had been caught in a wire box-trap set in an adjacent harness-room. On going to the spot they observed another rat, much larger than the unfortunate prisoner, running round the trap in a state of great excitement, jumping on it and trying to force its way into it, without taking the slightest notice of the two men, who thereupon went to arm themselves with sticks, and on their return found the large rat still engaged in the same manner as before. When the men returned to the harness-room with their sticks the rat ceased running round the trap, looked boldly at the men, and, cleverly dodging when they struck at it, retreated to its hole. As soon as the other rat in the trap saw itself thus abandoned, it again began to squeak, and directly it did so the larger rat again left its hole, and began running round the trap as before. This was repeated several times, the rat always evading the blows which were aimed at it, retreating for shelter to its hole, and again emerging as soon as its imprisoned friend recommenced its lamentations. This curious scene was somewhat abruptly ended by the trap being taken away by the person who had set it, and the rat which had been caught being then killed by a dog: it was a male rat, not quite fully grown. The larger rat, which may probably have been the dam of the captive, finally effected its escape."—*J. H. Gurney; Marlton, Totnes, June 11, 1872.*

Erratum.—I am desirous of correcting a misprint in the July number of the 'Zoologist'; under the head of "Kestrel, Sparrowhawk and Cuckoo," p. 3146, line 13, *for* living membrane *read* lining membrane.—*J. H. G.; July 5, 1872.*

The Common Mole.—I am most happy to respond to your editorial appeal to me (Zool. S. S. 3143) for information respecting the utility of the mole. Of all our indigenous mammals it ought certainly to be classed as "A 1" for usefulness; in fact, only its cousins, the shrews, can claim an approaching commendation from all who own a plot of land—farmers especially. It is known to all naturalists—and I wish it were to all farmers—that the most injurious of under-ground insects are the larvæ of certain Diptera, Coleoptera and Lepidoptera, and on these, with pupæ and larvæ of others of the same tribes of insects which descend into the ground to undergo their transformations, does the mole exclusively feed. Mr.

Brewin is quite right in recommending that the mole-hills should always be spread abroad on the land: I know of no more valuable top-dressing, and certainly none can be procured so cheaply. That they are unsightly when allowed to remain, and that they are very inconvenient in mowing grass and corn, I candidly admit, but is it wise to “kill the goose that lays the golden egg?” Would it not be much better to patiently spread the hillocks, and abide the time when the moles will voluntarily seek other feeding-grounds? Moles, like human beings, can in no wise subsist without food, and when they had thinned or exterminated the larvæ and pupæ of our under-ground insect pests, would naturally travel onwards in search of other “happy hunting-grounds.” The mole-catcher, with his home-made wooden traps, is perhaps the oldest institution of its kind in England,—certainly more ancient than the rat-catcher or truffle-digger,—yet, Conservative as I am, I would gladly welcome the day when our agriculturists would forbid this worthy(?) the privilege, and I may add patronage, in carrying on his most injurious trade. What surprises me is where we continue to get our moles from under such an universal persecution: how and where do they contrive to propagate their species? Even in woods you see the, to me, offensive bunch of dead moles hung up in some conspicuous place, such as at the crossing of two rides. I sincerely trust that you, to whom all farmers are so much indebted, will never cease to advocate the preservation of this most useful but persecuted animal.—*Henry Reeks; East Woodhay, July 3, 1872.*

The Common Mole.—I have never myself seen the mole actually heaving its hills, but I have often examined the tumuli, and have been able to quite understand how the earth is thrown up through a very small orifice in the ground so as to form the tumuli. In fact, the deposit of earth would appear to have been formed by a deposit from *above*. I wrote to my nephew, who is very observant of these things, and you may give the portion of his letter referring to it in the ‘Zoologist’ if you think it worth while.—*E. H. Rodd; Penzance, July 11, 1872.*

The Common Mole.—I am all at sea about moles. I have seen them heaving often, but have not the smallest idea how the operation is performed: the heap rises gradually with a motion from the centre, exactly as flour does in a pan with yeast; but, looking at the position of a mole’s feet, I see no possible way for him to make the hill, unless he stands almost on his head and throws up the earth above him, or else that there is some peculiar conformation about the fore *wrists* which enables him to do so, but anatomists might tell us more about that. I have seen moles in wet or rather dewy evenings hunting above ground, like a dog, for worms or slugs, I suppose.—*F. R. Rodd; July 7, 1872.*

The Common Mole.—In regard to Mr. Brewin’s question about moles (S. S. 3143), I may state that my opinion is that these animals are most

active in the spring of the year. In this neighbourhood I noticed a great number of hills in a field of young clover last March. I have seen spots in grass-fields on which there were more mole-hills than grass. On these places it was impossible to mow the grass. The moles in this district are very numerous and destructive. The other day I noticed a piece of French beans, the rows of which were undermined longitudinally, the moles, I presume, having in this case found food among the roots of the beans. There were no hills; the land being very light, the miners could make passages without making hills: they are more destructive in gardens than they are in fields. They are generally most numerous in light soils which have been manured, but I have seen them in barren lands, on clay soils and on hills. I saw their casts, newly made, in the winter of 1863, on the top of Ingleborough, which is the highest hill in Yorkshire but one. I consider moles injurious, either in the field or garden.—*G. Roberts; Lofthouse, near Wakefield.*

Wild-fowl Protection Bill.—On the motion for going into Committee Mr. Auberon Herbert carried an "instruction" enabling the Committee to extend it to *all* wild birds. He was opposed by Mr. Johnston, who has charge of the Bill. Mr. Herbert's friendly feeling towards birds is well known, and there is no doubt his motive is a kind one, but it appears to me rather more likely to damage than to serve the cause which ornithologists have so much at heart. An Act prohibiting the destruction of *all* wild birds cannot be enforced, and is not likely to remain the law of the land.—*Edward Newman.*

Are Guernsey Birds British?—I regret that my meaning was not made clearer in my answer to Mr. C. B. Carey's query (Zool. S. S. 3066). I first assumed, hypothetically, that by "British" people in general meant "found in Great Britain and Ireland and their adjacent islets;" but the inference from what followed was this, that *nothing could be considered "British" in a scientific sense except the productions of Great Britain, and such islands as belong geographically to it.* Under this rule the actual distance of an islet from the main land is of secondary importance. I should undoubtedly call the Shetlands adjacent to Scotland, and should consider them as certainly part of Great Britain in a geographical sense, as in the same sense I should hold the Channel Islands to be part of France. I am not aware what rule is followed by French naturalists, but I conceive that they ought to include the productions of the Channel Islands in their general works on French Natural History. Properly speaking "British" would not signify the productions of *Ireland*; and thus Mr. Blackwall correctly gave the title of 'Spiders of Great Britain and Ireland' to the work in which he included Irish, as well as English and Scotch spiders.

If the Channel Islands are "left out in the cold" by both French and English naturalists, it is easy to understand why their inhabitants should wish for some rule under which their productions might be included in works on British Natural History. A simple solution of all difficulties would be, as it seems to me, for British naturalists always to include the Channel Islands in their works, under a title analogous to that of Mr. Blackwall's work, 'Birds (or what not) of Great Britain, Ireland, and the Channel Islands.' In this way the word "British" would retain its legitimate signification, and no one would be misled.—*O. P.-Cambridge; Bloxworth, July 4, 1872.*

[I am truly obliged to Mr. Cambridge for this explanation: I most certainly accept the "simple solution" Mr. Cambridge suggests of "British naturalists including the Channel Islands in their works." The botanists, so far as I know, have done so already, and the plan seems to have met with general acceptance, and therefore, as regards the literature of British Natural History, there appears no great difficulty about birds; but how about the collector of insects? any partial practice, as that now adopted as regards plants, surely is indefensible, and the application of the practice to insects would involve the preparation of entirely new lists, catalogues and cabinets.—*Edward Newman.*]

Are the Channel Islands British?—Will you allow me to add a few lines to the correspondence which has appeared in the last two numbers of the 'Zoologist' on the above question? It appears to me that anyone speaking as a naturalist, and wishing to use accurate terms, will call an animal or a plant British which is indigenous to the geographical group of the British Islands. To ascertain what this geographical group consists of it is only necessary to look at the map of Europe, where we find two large islands, Great Britain and Ireland, side by side, and numerous smaller islands at various distances from the coasts of the large islands, but always nearer to some part of those coasts than to any part of the continent, forming, in spite of the aberrant Shetlands, a fairly-defined group conveniently designated as Britain. But this group does not include the Channel Islands, which are British politically only (and our question is not of politics, but of Natural History), for by nature, and according to Geography, they are as much French as the Scilly Islands and Orkneys are British, so that their natural productions must, as I think, be assigned to the French province. It can only be the desire to magnify the zoological and botanical treasures of this country, and to enrich their cabinets, which tempts English collectors arbitrarily, and without regard to the geographical claims of France, to annex the Channel Islands to the British group.—*Clermont; 35, Hill Street, Berkeley Square, July 10, 1872.*

Egg Collections.—I know of no substitute that will answer the purpose and look so well as cotton-wool; of course its colour is optional. I prefer

white, because the majority of our white eggs are speckled or blotched with reddish or rust-coloured spots, which perhaps show better on white wool.—*Henry Reeks.*

Death of Adjutants, Kites and Crows in a Cyclone.—I arrived at Calcutta on the 11th of January, 1865, and, when driving past the Government House at about five o'clock on the evening of the following day, I observed nearly a dozen adjutants perched on the roof. A few can always be seen on any evening at the same place, well on into the cold weather, although there are very few after the 1st of January. On the morning after the cyclone which passed over Calcutta during the night between the 1st and 2nd of November, 1867, I observed at least a score of dead adjutants between the cathedral in Chowringhee and Tank-square. On that occasion the dead kites and crows lay so thick on the roads and in the compounds, that they were removed in cart-loads, and hundreds of thousands of them must have been killed in Calcutta and the district over which the storm passed. At the bottom of Harrington-street, in Chowringhee, there is a tank called Elliott's Tank, round which are a few old peepul trees. I counted above two hundred kites and crows lying dead below these trees, and amongst them several adjutants. This cyclone took place after a fortnight of dry, hot weather, when everyone thought the rains had ceased, and when the adjutants are nearly all out of the city. The great roosting-place of the adjutants in Calcutta is on the top of Government House, which presents a long outline of high, isolated standing room for them; and on any evening during the rains they may be seen, like sentries, standing at regular distances all round it. They also frequent the old burying-place at the top of Park-street in great numbers; and it is indeed a melancholy sight on a gloomy evening in the rains to enter the precincts of that dreary place. The tombs are nearly all huge tenements of brick and mortar, going fast to decay, and covered with young peepul trees, which grow from their crevices till they split the masonry; and the action of the saltpetre causes the plaster to fall off to about six feet from the ground, and the bricks to moulder away. Many obelisk-shaped tombs, from the one which marks the grave of Sir William Jones (which must be about sixty feet high) downwards, are interspersed through the ground, and on each an adjutant takes his stand, resting generally on one leg, with his head between his shoulders.—*J. C. Lyell; Dundee, July 15.*—*'Field.'*

Honey Buzzard in Suffolk.—On the 13th of June I examined, in Mr. Bilson's shop, at Bury St. Edmunds, a splendid honey buzzard, in the flesh, which had been recently shot at Langham, in this county. I could not help observing the beauty of the iris, which was small and of the most brilliant golden yellow, strongly reminding me of that of the male goldeneye duck. Mr. Bilson has since informed me that, on dissection, it proved a male bird, but showed no signs of breeding. I find in my note-book an

entry that in August, 1865, I saw one at Mr. Bilson's, also in the flesh, which was shot at Stowlangtoft, in this county.—*J. G. Tuck; Tostock House, Bury St. Edmunds, Suffolk.*

White's Thrush.—Permit me to say a word or two as to your editorial remarks appended to my communication on White's thrush (Zool. S. S. 3148): they are pretty nearly what I expected, but the breeding habits were not (as you assume) lost sight of by either Dr. Tristram or myself. When Dr. Tristram first told me, I replied that the skirmishers were no doubt all missel thrushes; but after he described to me that the crescentic markings were so plain and the bird also much larger, I could not make myself believe that a pair of missel thrushes had produced a bird much larger and so totally different to themselves, especially by the 10th of April, and (as far as I am aware) the adult plumage would be worn at that time by a bird hatched the year before. Will you, or any of your readers, enlighten me on this point? Some one may have kept them in confinement and witnessed the changes. Allow me also to inquire if ever an *adult* missel thrush has been obtained that much exceeded eleven inches in length, and to ask those who believe that our English White's thrush is the immature missel thrush, how it happens they are so rarely obtained, and if they know the young of any other species so totally to outstrip their parents in size and distinctive markings; and as I do not think they are likely to grow less when they put on the adult plumage, what becomes of these large birds?—*J. Selater; Castle Eden Castle, July 2, 1872.*

[I neither expected nor desired that my hasty note on Mr. Selater's interesting communication should escape challenge. It is most undesirable that it should do so: the question of the identity or otherwise of White's thrush and the missel thrush cannot be too carefully considered, and statements bearing thereon cannot be too rigidly examined. In Mr. Selater's record of Dr. Tristram's observation, not a word is said about size: this element is invaluable in considering the original question, but is rather foreign to the subject when no comparison of size was instituted. I hope to hear more on this subject, and shall be obliged to any correspondent who can throw light on it.—*Edward Newman.*]

Sky Larks breeding in an Aviary.—Mr. W. Boots, of Swan-street, Landport, who has exhibited at the Portsmouth Ornithological Show a large cage containing about fifty specimens of birds, has now in the same cage a pair of common field sky larks, which have built a nest, laid four eggs, and been sitting close about ten days.—*'Field,' July 20, 1872.*

[I am desirous of collecting, for publication in the 'Zoologist,' as many records as I can of birds successfully breeding in aviaries, and I shall be greatly obliged for any information on this subject, with liberty to utilize it.—*Edward Newman.*]

Hawfinch eating the kernels of Cherry-stones.—The hawfinches are

again frequenting the gardens at Ramsdale, as I have seen ten (all old ones) on a hedge close by. These birds committed great havoc amongst the peas last year, and as they have hardly touched them this year we have been at a loss to find out on what they were feeding. But to-day, seeing them fly off some wild cherry trees which grow close by the garden, I shot the bird, which I enclose: it is very much mauled, but will answer the purpose. If you look in its mouth, you will see that it has been feeding on the kernels of the wild cherry. Many would think it impossible for so small a bird to break so hard a stone, but as I enclose some of the cherries you will see that the kernels agree with those in the bird's mouth. I also enclose some of the pieces of stones found scattered under the trees. I had no idea that they were so hard to break till I tried them myself to-day.—*J. Whitaker, jun.; Ramsdale.*

Siskins breeding in Confinement.—I have at the present time a pair of siskins which built two nests last year in a common canary breeding-cage; the nests were built on the floor of the cage, and three or four eggs respectively were laid. One young one was hatched out of the first nest, which lived to be a month old. I have had two nests this year, and have now a young one five weeks old; but, as was the case last year, with an increasing appetite the youngster grows weaker and thinner day by day. The fault lies, I think, with the food, which is as follows:—Groundsel, maw-seed, poppy-seed, hard-boiled egg, sopped bread, and the chrysalids of the common gentle. The latter is his favourite food, and is what the old ones prefer to feed the young with, though they do not eat them much at other times. The old ones, when not breeding, are fed on canary and millet, neither of which are eaten by the young one. As the old ones are going to nest again, I should be very glad if any of your readers who have hatched and reared young bullfinches, chaffinches, or any bird requiring insect food, would kindly give me the benefit of their experience.—‘*Field.*’

Nesting of Pennant's Parrakeet in Confinement.—An account of this species breeding in the open air may interest some of your readers. For six years I had a pair in a cage, and, thinking they might breed if at liberty, let them fly in April, 1871. They nested in the hollow of an elm, and hatched three out of the four eggs in July. One bird is now alive, two are preserved, and the egg I have in my possession. The birds returned in November to a cage placed for them, spent the winter in their old quarters, and are now nesting in the same place as last year, having turned them out on the 15th of April.—*Hubert Jary; Battlesden Park, Woburn.* [Pennant's parrakeet (*Platycercus Pennantii*) is a native of New South Wales. We are not surprised to hear of its breeding in this country, for we believe that this and many others of the parrot family would do so under favourable circumstances, were it not for the fact that the two sexes are seldom received together by one person.—*Editor of 'Field.'*]

Woodcocks breeding in Wolmer Forest.—Mr. S. Dixon, the chief warden of Wolmer Forest, has kindly sent me the following notice, under date of the 9th of May, 1872:—"I have seen two broods of woodcocks this spring in the forest, the first on the 3rd of May, and the second on the 6th. The brood I noticed on the 3rd consisted of three young ones and the two old birds, that on the 6th of four young ones with one old bird—the other, no doubt, close at hand. The young birds were nearly as large as the old ones, and flew equally well."—*H. W. Feilden; Aldershot, July 2, 1872.*

Sabine's Snipe in Scotland.—In the beginning of May I saw a specimen of Sabine's snipe in the shop of Mr. Sanderson, an Edinburgh birdstuffer. The bird was shot in a marsh near Montrose about the 9th of March, 1872, by a person who brought wild-fowl to the market. Tail-feathers fourteen in number. This specimen is now the property of the Montrose Museum.—*Id.*

Gullbilled Tern at St. Just, near Penzance.—I have just examined a very clean summer-plumaged female specimen of the gullbilled tern (*Sterna anglica*), which is rare on our coasts. The ovary had a large bunch of eggs about the size of swan-shot downwards.—*Edward Hearle Rodd; Penzance, July 11, 1872.*

The Barramunda, a new Ganoid Fish from Queensland.—This fish was first made known to Science by Mr. Gerrard Krefft, the talented and industrious curator of the Australian Museum at Sydney. He communicated this remarkable discovery to the Zoological Society of London, on the 28th of April, 1872. Years previous Mr. William Forster had informed Mr. Krefft that there existed in the fresh waters of Queensland a large fish with cartilaginous back-bone; but he was thought to be mistaken until he succeeded in obtaining for Mr. Krefft a specimen which, although in an imperfect state of preservation, removed all doubts. As soon as Mr. Krefft had recognized the importance of this discovery, the Trustees of the Australian Museum took steps to secure well-preserved specimens; they sent a collector into the district where the animal was known to occur, and with their usual liberality despatched to the British Museum the first specimens they could spare, and by these Dr. Günther has been enabled to work out the details of its structure. Mr. Krefft, adopting the views of Bischoff, Gray, Rymer Jones, and other distinguished zoologists, appears to consider the Barramunda, with the singular group to which it belongs, to be amphibious reptiles rather than fishes; the zoologists I have mentioned drew their conclusions from an examination of the two genera, *Lepidosiren*, a native of tropical America, and *Protopterus*, an inhabitant of tropical Africa. In a paper I had the honour to read before the Linnean Society on the 15th of January, 1856, I endeavoured to show that this conclusion was premature. At p. 5020 of the 'Zoologist' for 1856 a full reprint of this paper was

given, but the leading naturalists I have mentioned preferred continuing in the belief that these creatures, although possessing so many ichthyic characters, were really reptiles, and not admissible into the class of fishes. A most luminous paper by Dr. Günther, published at p. 257 of No. 44 of the 'Popular Science Review,' entirely confirms my views, and must, as I think, set the question finally at rest, and remove the three genera, *Lepidosiren*, *Protopterus* and *Ceradotus* from the class Reptilia, and place them in that of fishes. The following structural details are derived from Dr. Günther's paper:—The body is eel-shaped, but considerably shorter and thicker than the common eel, and covered with very large scales; the head is almost entirely naked, flattened and broad; the mouth small, and provided with thick soft lips; there are no external nostrils. The anterior portion of the trunk is depressed, but soon passes into a compressed form, and terminates in a thin, pointed, tail, which is surrounded by a broad vertical fin, supported by innumerable fine cartilaginous rays: the creature has no other fins that can be properly so called, but four paddles, which remind one of those of the enalio-saurians: these are covered with small scales along the middle from the root to their extremity: they are flexible in every part, and in every direction, and are too feeble to assist in locomotion on land, but Dr. Günther suggests they may be used when the animal crawls in water over the muddy bottom of a creek. The *Burramunda* is said to attain a weight of twenty pounds, and a length of six feet; but the largest specimen received at the Museum is about three feet and a half long. It appears to feed principally, if not entirely, on plants; Dr. Günther found the intestinal canal crammed full of more or less masticated leaves of various plants belonging to the natural orders Myrtaceæ and Gramineæ; they had lost their green colour entirely, being of a uniformly deep black, as if they had lain in water for some time, and had been eaten in a decomposing condition. The quantity of these vegetables is enormous, and there is no doubt they constitute the principal food of the fish. Shells, fragments of which have been found in the stomach, Dr. Günther thinks may have been swallowed accidentally, but it has been stated repeatedly that the *Burramunda* can be taken with a hook baited with a worm.—*E. Newman.*

Occurrence of the Bogue off Plymouth.—On the 26th of June a rare fish, which I recognized as the bogue (*Sparus boops*), was captured near Plymouth. There is a good figure of this species in Couch's 'Fishes of the British Islands'; he says, "The first British example recorded was caught in a ground-seau, in company with gray mullets, in 1842, in the harbour of Falmouth, and which fortunately came into the hands of A. Fox, Esq., who caused a drawing to be taken, from which our figure is derived. The specimen itself was preserved, and is now in the Museum of the Royal Cornwall Institution, Truro. Others have since been caught, and one presented to the British Museum by W. P. Cocks, Esq."—*J. Gatcombe.*

Large Pike.—A pike weighing twenty-four pounds was taken at Maple-Durham, on Saturday, the 24th of June, by that well-known fisherman, Harry Wilder.—‘*Field.*’

Fine Salmon.—Two salmon, weighing respectively nine pounds and fourteen pounds and three-quarters, were taken in the Dee, at Corwen, on the 24th and 28th of June.—*Id.*

Use of the Rattles of the Rattlesnake. By J. G. HENDERSON.

(Reprinted from the ‘*American Naturalist*’ for May, 1872.)

IT seems that the singular structure from which the subject of these notes derives its name was intended as a special stumbling-block in the path of anti-Darwinists, or to intensify the “struggle for existence” which the Darwinian theory, like all other theories, must undergo.

In most notices I have seen of the rattles of the rattlesnake, they have been mentioned as though they were of no advantage to the possessor, and that natural selection would never produce them, but, on the contrary, would weed them out, if that theory were correct. It seems to me that the whole trouble in the matter arises from the assumption that the sound of the rattles, as a war-cry, is a disadvantage to the reptile, by calling the attention of its enemies to it, and thus inviting its own destruction, and that consequently the only way to reconcile the existence of the rattles with the theory of Darwin is to show that there is some other use made of them, and that in striking the balance between the profit and loss sides of the ledger the line falls on the side of the former, and for that reason natural selection produced and retains the rattles. If I understand him rightly, this is the view of the matter taken by Prof. N. S. Shaler in his paper in the January ‘*Naturalist.*’ He says that for some years he has “been teaching that the tail appendage of the rattlesnake was not to be explained upon the theory of natural selection, inasmuch as it could contribute in no way to the advantage of the animal; that it seemed to him quite clear that it was rather calculated to hinder than to help the creature in the race of life by warning its prey of its presence.” But he intimates that he is now ready to say, that this appendage can be explained upon the theory of natural selection. He considers the idea that it might be used as a sexual call as untenable, but that the whirring sound of the rattles closely imitates the sound made by the Cicada, and for this reason is used as a

call-note, as a hunter uses his bone turkey-caller, to induce the bird to come within the range of his weapon. Now the first question which naturally arises is this:—Does the snake sound its rattles when seeking to capture its prey? I have always understood that it is only when it throws itself upon the defensive and prepares for battle that the rattles are sounded; that it is an alarm note, a war-cry, and not a gentle, deceptive invitation to the victim. I have never seen a rattlesnake, and know of course nothing personally of its habits. But if this use is not made of the rattles as suggested by Prof. Shaler, and the sound only serves to call the attention of its enemies, and thus invite destruction, then indeed is the theory of natural selection nonplussed. But as I view the matter, instead of inviting his destruction by sounding the rattles, it is one of the most effective means of self-protection, and is as useful to it in the race for life as is the growl of the tiger when threatened with danger. The snake does not sound its rattles until it considers itself discovered, and not then unless it apprehends danger. It throws itself in position to strike, and says in unmistakable language, "Look out, I am ready for you!" If pushed upon, it makes a leap at its antagonist and again throws itself in position to renew the conflict, and again sounds the note of defiance; a note calculated to alarm, and, like the war-whoop of the Indian, strike terror to the heart of the assailant; but it may be said that the Indian only utters his yells when rushing on his enemy, or when actually engaged in the conflict, and the sounding of the rattles upon the first approach of danger is a disadvantage. Now it seems to me, if this were true, and if it be a piece of rashness upon the part of the snake thus early to exhibit his combativeness, that natural selection would cure the matter by selecting and preserving the more timid, and that, eventually, rattlesnakes would only sound their tail-bells when it would best promote their interests.

We are not to judge of the advantage or disadvantage of the rattles by their effect upon the nerves of man alone, though no doubt many a man has turned his back and been deterred from making an attack by the sound of these rattles and the defiant attitude of their possessor.

The ability of the snake to defend itself does not consist in its strength or size, or in its power of overcoming its adversary by a prolonged conflict, for most of its enemies are its superior in

size and strength. Nor does its deadly poison act quickly enough to secure its own safety when it is attacked, but, in most cases, the victim, after the deadly stroke is given, may still revenge itself by the destruction of the snake. But the *certainly* of the effect of the poison serves as a warning and is advantageous, not in defence after the attack is made, but in *preventing* an attack from being made. If, then, the colour of the rattlesnake were different from all harmless snakes, so much so as to render it conspicuous, this would be beneficial to it, by the readiness with which all animals would recognize it, and thus protect the snake by this notice of the deadly character of its weapons. If, then, a conspicuous colour would be of advantage, it seems to me that any other means which it may be able to use in making known its character to any animal that may come near it, would be advantageous, and would be increased and preserved by natural selection, and that the whirring noise which it produces, in this view of the matter, admirably serves its purpose. In effect it amounts to this, and by experience its enemies learn to understand its language, "I am a *rattlesnake*, armed with what will be death to you if you come too near; give me a wide berth!"

Prof. Shaler remarks that it is a fact well known doubtless to those who have observed serpents, that many when in a state of excitement vibrate the end of their tail just as the rattlesnake does. This statement reminded me of a South-American species described by Darwin in his 'Voyage of a Naturalist' (vol. i., p. 123, Harper's ed.), where he says:—

"Of reptiles there are many kinds: one snake (a *Trigonocephalus*, or *Cophias*), from the size of the poison-channel in its fangs, must be very deadly. Cuvier, in opposition to some other naturalists, makes this a sub-genus of the rattlesnake, and intermediate between it and the viper. In confirmation of this opinion I observed a fact, which appears to me very curious and instructive, as showing how every character, even though it may be in some degree independent of structure, has a tendency to vary by slow degrees. The extremity of the tail of this snake is terminated by a point, which is very slightly enlarged, and as the animal glides along, it constantly vibrates the last inch; and this part, striking against the dry grass and brushwood, produces a rattling noise, which can be distinctly heard at the distance of six feet. As often as the animal was irritated or surprised, its

tail was shaken, and the vibrations were extremely rapid. Even as long as the body retained its irritability, a tendency to this habitual movement was evident. This *Trigonocephalus* has, therefore, in some respects, the structure of a viper, with the habits of a rattlesnake; the noise, however, being produced by a simpler device."

It was these remarks of Darwin that first suggested the problem of the rattlesnake's tail to my mind, and, as I had thought considerably about the matter, of course I was deeply interested in the paper of Prof. Shaler; but I must acknowledge that, while many of his suggestions are correct and highly valuable, I was disappointed to find that the only advantageous use, in his estimation, of this tail appendage of the rattlesnake, is an imitative call-note to allure birds within its reach, and that, otherwise, it is rather a disadvantage than an advantage to be preserved and perfected by natural selection. If it is useful for both purposes, then there is a double reason for the action of natural selection. If it is not used as an imitative call-note, but is useful in the manner I have pointed out, then I have shown that it is explained by natural selection.

Description of the Larva of *Eupithecia pygmaæta*.—Long, very slender, extremely attenuated on the capital segments. Ground colour pale dull yellowish green. Central dorsal line pale olive, connecting a series of very distinct and well-defined urn-shaped blotches of the same colour, which become confluent on the anal and capital segments. Subdorsal and spiracular lines pale olive, sinuous, well-defined and rather broad. Belly without markings. Skin rough and rugose, freely studded with short whitish hairs. In form and general appearance comes nearest to the larva of *Eupithecia pulchellata*. Feeds on petals and anthers of *Stellaria holostea*. Full fed June 20th. I am indebted to the kindness of Mr. Hodgkinson, of Preston, and Mr. Hellins, of Exeter, for an opportunity of describing this interesting and almost unknown larva. The former gentleman took a female moth on May 25th. She deposited three eggs on a daisy flower, which, together with the parent insect, he forwarded to Mr. Hellins. The eggs hatched June 2nd. Mr. Hellins kindly sent me a larva just previous to its last moult. I had no *Stellaria holostea* within easy reach, but found it feed greedily on the petals and stamens of *Cerastium tomentosum*. Mr. Buckler has taken several life-like portraits of the interesting little stranger.—*H. Harpur Crewe; The Rectory, Drayton Beauchamp, Tring, June 21, 1872.*

Proceedings of the Entomological Society.

July 1, 1872.—Prof. J. O. WESTWOOD, M.A., F.L.S., President, in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—‘Bulletin de la Société Impériale des Naturalistes de Moscou,’ Année 1871, Nos. 3 and 4; presented by the Society. ‘Illustrated Catalogue of the Museum of Comparative Zoology, at Harvard College,’ No. v.; by the Trustees. ‘The Canadian Entomologist,’ vol. iv., No. 5; by the Editor. ‘A Systematic Revision of some of the American Butterflies, with brief notes on those known to occur in Essex County, Mass.,” by Samuel H. Scudder; by the Author. ‘The Entomologist’s Monthly Magazine’ for July; by the Editors. ‘Lepidoptera Exotica,’ part xiii.; by E. W. Janson. ‘Notiser ur Sällskapetets pro Fauna & Flora Fennica Förhandlingar,’ vols i., iv., v., vi., vii. and xii.; by J. W. Dunning, Esq. ‘Exotic Butterflies,’ part 83; by W. W. Saunders, Esq. ‘Notice by the Board of Studies for the Natural Science School of the University of Oxford. Issued in pursuance of Statute Tit. v. (vi.), Sect. i.’; by Professor Westwood.

Election of a Member.

Lord Moreton was balloted for, and elected an ordinary Member.

Exhibitions, &c.

Mr. Jenner Weir exhibited two examples of *Agrotera nemoralis*, taken by him in Abbot’s Wood, Sussex, on the 26th ultimo.

Mr. Meldola exhibited several varieties of British Lepidoptera, including dwarf specimens of *Anthocharis cardamines*, *Porthesia auriflua* and *Abraxas grossulariata*, and a *Venilia maculata* in which the black spots of the wings were entirely absent; also an example of *Leucania vitellina*, taken at Brighton in 1869.

Prof. Westwood exhibited various interesting Coleoptera sent from Ceylon by Mr. Thwaites. Also prettily banded cocoons of some species of Ichneumonidæ (likewise sent from Ceylon by the same gentleman) remarkable for being attached to silken threads more than two inches long. The same lot of Ceylonese insects had furnished him, further, with an interesting illustration of the habits of a Lepidopterous insect, the larva of which cut out large oval pieces from a leaf of Citrus, making therewith a moveable dwelling under which it fed, fastening it down by the edges: owing to the

larva having been infested with Hymenopterous parasites, the determination of the species was frustrated.

Mr. Müller exhibited the mode of life of three species of Dipterous larvæ in the fronds of *Pteris aquilina*, collected at Weybridge on the 29th ultimo, *viz.*—rolls formed by the larva of *Cecidomyia pteridis* on the edge of the fronds; mines of some species of Muscidæ in the tips of the leaflets, and a globular tent at the ends of the fronds, also produced by a species of Muscidæ.

Mr. Dunning called attention to an article in 'Nature' for June 20th, 1872, by Mr. H. N. Moseley, concerning the sound produced by *Acherontia Atropos*. After passing in review the various theories which proposed to account for the production of this sound, Mr. Moseley detailed certain experiments he had made, and arrived at the opinion held by many entomologists that the sound is caused by expiration of air through the proboscis, in connection with certain elevating and depressing muscles in the interior of the head, which act upon a dome-shaped cavity or reservoir, after the manner of bellows.

Mr. Dunning further alluded to a letter by Dr. Le Conte in the same journal for June 27th, 1872, concerning the parasite of the beaver (*Platypylla castoris*, *Ritsema*; *Platypsyllus castorinus*, *Westwood*), upon which Prof. Westwood had founded the order Achreioptera, whereas *Ritsema* placed it in the sub-order Aphaniptera. Dr. Le Conte stated that, in his opinion, it pertained to the Coleoptera. Furthermore he thought the insect was not truly a parasite, but rather an inquiline, living probably upon epidermal scales. He announced that the Rev. A. Matthews had prepared for him a series of beautiful dissections of the creature.

Prof. Westwood observed that with reference to Dr. Le Conte's remarks on the Coleopterous nature of the genus, he could not recognize it as belonging to the order Coleoptera; and that his detailed illustrations (which he had recently shown to Dr. Le Conte) intended for publication in his forthcoming 'Thesaurus Entomologicus,' had for some time been engraved.

Prof. Westwood called attention to the notice of the Board of Studies for the Natural Science School at Oxford (a copy of which was on the table), as being the first recognition of Zoology as a branch of university education at Oxford. He also alluded to Mr. Scudder's memoir on North-American Rhopalocera, as exhibiting a complete *bouleversement* of generic nomenclature, nearly every species being also formed into a separate genus, with generic characters of sometimes four to six pages in length.

Mr. W. A. Lewis placed before the meeting a copy of the following circular addressed to entomologists, with list of signatures as appended thereto:—

“Entomological Nomenclature.”—The undersigned, considering the confusion with which entomological nomenclature is threatened (and from which it is already to no small extent suffering) by the reinstatement of forgotten names to supersede those in universal employment, urge upon entomologists the desirability of ignoring the names so brought forward, until such time as the method of dealing with them shall be settled by a common agreement.

H. W. Bates	Frederick Bond
Alfred R. Wallace	J. Jenner Weir
William C. Hewitson	E. Shepherd
Francis P. Pascoe	Edward W. Janson
T. Vernon Wollaston	Edward Newman
John A. Power	E. T. Higgins
Samuel Stevens	R. F. Logan
Edward Sheppard	J. Greene
Ferdinand Grut	Thomas H. Briggs
J. W. Dunning	W. C. Boyd
Frederic Moore	Howard Vaughan
W. Arnold Lewis	

Prof. Westwood stated that he had recently published some remarks on the law of priority in nomenclature in the ‘Academy’; he considered a law similar to that which limits adverse claims to real property in this country to a period of twenty years, might with equal advantage be applied in Zoology.—*R. M.L.*

Pallas’s Sand Grouse in Scotland.—Those of your readers who are interested in Scottish Ornithology will, I daresay, be glad to hear that a remarkable Asiatic bird—Pallas’s sand grouse, a sudden irruption of which occurred in Great Britain in 1863—has this year again made its appearance. On Tuesday, the 25th of last month, one was seen basking on a sandy pathway above the banks of the river near the town of Girvan. On being disturbed, it flew over an adjoining wall, on the other side of which there were three more. A few days later—namely, on Saturday, the 29th—another was seen near the same place; and I may add that no doubt need be entertained as to the identity of the species, as in both instances the birds were approached within a distance of only a few yards. I shall be very glad to learn whether these birds have been seen in any other part of the West of Scotland.—*Robert Gray; Glasgow, July 2, 1872.—From the ‘Glasgow Herald.’*

Zoology of the Royal Academy. By EDWARD NEWMAN.

THE Royal Academy has closed its one hundred and fourth Annual Exhibition, and, as usual, amidst a wilderness of miscellaneous paintings, has presented to our notice a few zoological designs both of interest and merit. "No mere transcripts of the objects of Natural History" are allowed on the walls of Burlington House: such is the edict of the R. A. A far higher authority expressly forbids the making of "a likeness of any beast that is on the earth." Exhibitors seem to have kept both injunctions, human and divine, steadily in view, and to have yielded implicit and praiseworthy obedience. There are, it is true, thousands of fleeces evidently studied in a fellmonger's yard, and thousands of calf-skins and cow-hides elaborately painted at a trunk-maker's,—and well painted too; but neither has Prometheus deigned, nor have the painters attempted, to infuse into these tegumentary habiliments of ruminants the spark of life. As for Prometheus, perhaps he may be in ill-humour; his liver may be out of sorts, suffering from an attack of vulture; or he may be growing old and blind, and unable to recognize the vestments,—unable to make out to whose bodies they once belonged: and as to the painters, their genius is perhaps restrained by the law and command which I have already quoted. One thing is certain,—life is entirely absent; like the carvings of ingenious Dutchmen, which abound in our nurseries, the creations of our animal painters' are unmistakably wooden.

Still there are exceptions—interspersed among the noahsarkian flocks and herds—which seem to have surreptitiously escaped their floating dwelling-place: mingled with pink hunting-coats and top-boots, shovel-hats and buttonless waistcoats; chignons, paniers, and Dolly Vardens; volunteer uniforms and aldermen's gowns; indeed brave toggery, that would make the fortune of Rag Fair or Monmouth Street; there are the zoological pictures that do one good to look on: not many, indeed,—I could literally count them on my fingers; but still they are there, all the more precious for their rarity. Sir Edwin Landseer has three such: misty, unfinished, almost uncoloured, dream-like,—but the dreams of unquestioned genius. Turner, as he approached the close of his illustrious career, flooded the canvas with a sea of those brilliant

colours, in which he so delighted. It seems that Sir Edwin does exactly the reverse; his aim is to reduce colour to its minimum value. No. 25, *Lady Emily Peel and her favourite dogs*, is little more than an idea: there are really no details; there is absolutely no finish; the colour is feeble in the extreme, like that of a garment which once had a colour pattern, now all but obliterated; a rose fallen from a broken vase is indicated—I will not say represented—by a smudge of pink; the vase itself is a nonentity; the lady a mere sketch;—but yet this picture tells its own tale: if but a dream, it is a dream of grace and beauty that would make the fortune of a less distinguished man. No. 109, *The Baptismal Font*, is another sketch of similar dream-like character,—a wild dream arrested as it was fading away, caught as it was flying, but such a dream as never was vouchsafed except to the highest genius: the attitudes of the juveniles around the font are perfect; and one touch of Nature, insignificant in itself and overlooked by the multitude, must be especially noticed by the entomologist,—a lamb that buries its nose in the fleece of a friend to escape the attacks of the insidious gadfly (*Æstrus Ovis*). But as regards this particular exhibition, *The Lion and the Lamb*, No. 409, is Sir Edwin's masterpiece. It may be said that, in this instance, the ideal has been substituted for the real, that genius has created and not copied the lion and the lamb: the figure of the former combines the perfection of animal power, animal dignity, and animal repose; though he be crowned king of the animal world, no one can suppose that there is any uneasiness under his crown: the figure of the lamb combines with equal success the attributes of helplessness and trust; he, also, has no uneasiness, no fear, no care; his safety is a matter of course; he has no more perception of danger than when he was imbibing the maternal nectar that has hitherto been his sole support. In the very contrast of the two figures there is perfect harmony. I hear the critic exclaiming: "the lion's nose is out of drawing;" "the lamb's tail is too long;" "how absurd to draw lion and lamb in such a position." Dear critic, only wait until the scales have fallen from thine eyes, or thou canst get the whole design into one field of vision, and thou wilt see differently.

Mr. H. W. B. Davis not only attempts, but succeeds in a very different and far more difficult task,—the representation of animals in violent action. *A Panic*, No. 124, is a huge canvas instinct with

life. I can readily imagine that not to know the painter argues myself unknown; but, nevertheless, I am bound to confess that when I found that a Mr. Davis was the artist, I felt myself infinitely humbled by my entire ignorance of the name. Here is a painter displaying perfect mastery of his subject, consummate skill in manipulation, wonderful knowledge, great taste in arrangement; a painter who rivals Rosa Bonheur, who challenges our own Ward or Paul Potter himself on their own ground, and even gives them odds,—for their bulls are quiescent, and his bull is “rampageous;”* who paints motion; who represents cattle in their wildest and most turbulent mood;—and yet whose name as a painter I had never heard. That white animal galloping in front is a triumph of art, a triumph over the greatest difficulty with which a painter has to contend. I use the word “animal” advisedly, as I observe my brother critics call it a bull, a designation in which I cannot concur; but there *is* a bull in the picture, exuberant in health and strength, and vitality and power, and such a bull as one would not wish to meet in a narrow lane. Perhaps, however, the head of the red cow, in the right-hand lower corner of the picture, is the greatest success. Here the artist brings us face to face with his handy-work, and challenges criticism: “Examine it closely,” says he; “I am perfectly aware it is a violation of your laws; it is, indeed, an exact transcript of Nature; but I trust to my skill; I trust that when you see the result of the transgression you will condone the offence: as Ipparides trusted to the effect of Phryne’s beauty on her judges for absolution of her crime, so do I appeal to the merits of my picture for your forgiveness.” And here, having incidentally entered the domain of sculpture, let me notice No. 1409, *Trotting Bull*, by Mr. Davis, evincing powers as a sculptor equal to those he has displayed as a painter.

I turn to “*Daniel*,” by Breton Rivière, No. 539; and let me observe, in the first place, that there is something very happy in the title of the picture. Only a man of first-rate taste and ability would have trusted to this one word, and yet how ample, how satisfying is that word; how effectually would the title have been vulgarised by adding “in the lion’s den.” Most of my readers will recollect “*Circe*,” by the same painter, last year; and it is delightful to contrast these two great paintings, as restored by memory now that the realities are withdrawn, and in all probability

* Dickens, ‘Great Expectations.’

for ever, from our gaze. Alike as they are in the successful exhibition of the supposed control of animal forms by something akin to human intellect, the pervading sentiment of the two is widely different. The "CIRCE" supposes men, under the influence of drink, to take upon themselves the form of beasts, and very disgusting beasts too; but they are men still, though transmuted, so far as the body is concerned, to swine: under that form the higher, the purer attributes of man's mind seem lost, or at any rate eclipsed, by the intoxicating draught; still the mere animal instincts of man are developed and increased. Drink has released them from the ordinary restraint of decency; practically illustrating the axiom, *in vino veritas*, they exhibit their innate sensuality without attempt at concealment. The moral intended by the poet is most ably enforced by the painter.* The "DANIEL" supposes beasts compelled to submit to restraints akin to those which reason and conscience impose on man; or rather supposes beasts of the most ferocious type—elevated and controlled by the temporary indwelling of a power, which they can neither comprehend nor resist—raised by this inscrutable power to a knowledge of right and wrong, a knowledge that exacts unquestioning obedience.

Reverting for a moment to "The Lion and the Lamb," another contrast occurs to me: Landseer's lion is a lion of the imagination, of poetry, of fiction; Breton Rivière's lions are the lions of study, of prose, of fact, they are not even the free lions of Africa, *arida nutritrix leonum*, but the lions of menageries, of zoological gardens,—beasts that one only sees through iron gratings: and it is thus that the painter must, perforce, have studied them; he had no choice. This is no reproach; all our knowledge of lions is from a like source; all is derived from captives, miserable captives, which visitors pay their sixpences or shillings to behold in their captivity. Nevertheless, the painter has introduced into these literal transcripts of imprisoned lions something more than this, something wonderful and supernatural: he represents them as controlled by a power greater than their own; an authority to which they yield unquestioning obedience; an authority inscrutably connected with, or perhaps emanating from, the slim, feeble old

* The teetotallers would do more good by reproducing this instructive fable than by blowing their trumpets and beating their drums in all the towns in the kingdom, even although decorating themselves with forester's belts across their breasts, as on a late occasion at the Crystal Palace.

man, who is standing before them with his arms pinioned, helpless yet fearless; an authority that permeates their muscles, their limbs, their claws, their very eyes; truly the lions are conscious of the authority, but not cognizant of its source; they are perfectly aware that they must not injure that defenceless old man, that they must not touch a hair of his head; but they know not why they must not. One lioness—young, ignorant, and ill-mannered—spits at him, after the fashion of an angry kitten: this is the only symptom of resistance or disobedience, and is so manifestly an ebullition of impotent rage, that the action enhances rather than detracts from the utter subjection of her more aged and more powerful companions in captivity. There are two older lionesses,—lank, lean, hungry savages: one slinks and crouches, and crawls almost on her belly, slowly dragging her limbs with a famished, stealthy, sulky gait; the other tries to hide her head, and especially her eyes, as if ashamed of her abject condition, as if her punishment were “greater than she could bear.” There are also two principal and larger lions, and these exhibit more dignity than the lionesses, under the trying circumstances in which they are placed: they feel the restraint fully as much as the lionesses, but are more reticent of their feelings,—not so restless, so irritated; they submit with a better grace, with more self-respect; they do not condescend to express the same rankling annoyance. The smaller of the two—he on the right hand—seems performing something like an act of worship,—a bending of the knee, while the larger and more powerful beast on the left is mute with astonishment, overwhelmed with wonder; there is an entire absence of all disturbing influence on that majestic face: no fear, no anger, no desire for revenge, no hunger, no thirst for blood; the only emotion is astonishment; he is as one caught in an invisible net; he cannot make it out.

What shall I say of Daniel himself? The painter has represented him with his back to the spectator, so that his face is not visible. No one will imagine that a painter, who has ventured to depict the faces of beasts under such unwonted conditions, and who has succeeded to a miracle, would shrink from trying his hand on the face of a man. But to what purpose would he have done so? Certainly not to illustrate the subject; certainly not to add force to his design: no expression that human skill could have given to Daniel’s countenance would have told the tale half so well as it is

told by the back of that motionless, fearless, speechless form. The trust of Daniel is not in his strength, he is evidently too feeble to contend with lions; nor is it in his activity, there are no means of escape; nor is it in strategy, there is no scope for scheming: his only hope, his only trust, is in that God whom he has served, and whom he knows is able to save to the uttermost. This implicit trust seems to have been shared by the monarch who blindly consented to the murder, who weakly yielded to an imposition; for he tells Daniel: "Thy God whom thou servest continually, He will deliver thee;" apparently weak and foolish words uttered by a weak and foolish man; but Daniel knew them to be true.

It is worthy of notice that this judicious painter has declined to avail himself of a portion of the narrative which might fairly have been introduced for sensational effect: I allude to the presence of an angel standing between the lions and their victim. Daniel's own account of his deliverance would fully have justified this: "My God hath sent his angel, and hath shut the lions' mouths that they have not hurt me." I can easily imagine how a painter with less skill, or less judgment, would have introduced this supernatural guardian, and thus destroyed the seeming truthfulness of a scene which is now perfect in its severe simplicity. I verily believe that a Bible illustrated in this way would do much to arrest the spread of infidelity. The common effect of Bible pictures is to render the text incredible, often ridiculous, and thus pander to unbelief.

There is still another picture of animals (and a very pretentious picture it is), No. 504, *Goats in Distress: Mountains of Mont Dore, Auvergne, France*, by A. F. A. Schenck. There is a kind of merit in this painting wanting in the lifeless herds and flocks to which I have alluded. It represents the goats as living; nor do I suppose the extravagant attitudes, in which Mr. Schenck has placed them, utterly impossible; further, I believe the drawing of the goats to be anatomically correct; but I must add such performances give me no pleasure: it is difficult, doubtless, for acrobats to tie themselves in knots, but the difficulty does not enhance the satisfaction of the sensible beholder; he only regrets that such contortions are possible. And so, although I admit the painting of the goats to be good, and although I suppose that goats *can be* and *have been* forced into these revolting attitudes, I can only regard the representation of such feats as repulsive in the extreme.

EDWARD NEWMAN.

Notes from the Lincolnshire Coast and North Sea.

By JOHN CORDEAUX, Esq.

JULY, 1872.

Seal.—The seal (*Phoca vitulina*) is not uncommon on that part of the Lincolnshire coast adjoining the Wash. This immense estuary, lying between Lincolnshire and Norfolk, is in great part occupied with large and dangerous sand-banks, intersected by deep but narrow channels. At ebb the sands are uncovered; and at these times, on hot days, numbers of seals may be found basking and sunning themselves on the hot sands, or rolling and wallowing in the shallow water along the bank. Sometimes a herd of fifteen or twenty of these interesting creatures will collect on some favourite sand-spit: their chief haunts are the Long-sand, near the centre of the Wash; the Knock, along the Lincoln coast; and the Dog's-head sand, near the entrance to Boston Deep. In the first week of July, when sailing down the Deep along the edge of the Knock, we saw several seals: some on the bank; others with their bodies bent like a bow, the head and hind feet only out of the water. They varied greatly in size, also in colour, hardly any two being marked alike: one had the front of the head and face dark coloured, wearing the colour like a mask; in others the upper parts were light gray; others looked dark above and light below; and some dark altogether. Our pilot and sailing-master, who knows every hole and corner of these waters, says that for many years he has seen on the Long-sand an immense gray seal, far larger than any of the others, but for the last two or three years had missed him: the young have occasionally been taken. In one instance a fisherman, who was passing down the Deep, found a cub fast asleep; he succeeded in capturing it as he ran past by placing a small hand-net or dredge under it as it lay on the surface of the sea; the old seal was swimming close to the place at the time. The female has one young one in the year; and as these banks are covered at flood, the cub, when born, must make an early acquaintance with the water. In most of the Phocidæ the young one is at first covered with a sort of wool, the second or hairy dress being gradually acquired; and until this is the case it does not go into the water. This, however, does not appear to be the case with the common

seal, for Mr. L. Lloyd says (I believe in his 'Game Birds and Wild Fowl of Norway and Sweden,' but I have not the book to refer to) that the cub of the common species, whilst still in its mother's womb, casts this woolly covering; and when ushered into the world has acquired its second or proper dress. If this is the case, it fully accounts for the cub being able to bear immersion from the hour of its birth. The seal, if lying undisturbed and at rest, can remain for hours without coming to the surface to breathe.* It is possible that the large seal, which for so many years¹ haunted the Long-sand, may have been the gray seal of the Northern seas, *Phoca Gryphus*. That examples of the Phocidæ, besides the common species, do occasionally wander to our coast, is not improbable. The small arctic seal (*Phoca hispida*), known as the ringed or marbled seal, has occurred on the coast of Norfolk: it has also been taken in the Channel and off the French seaboard.

Kittiwake Gull.—July 2nd. This afternoon we passed through a flock of kittiwakes, beating for food at the mouth of the Humber, between the 'Bull' and 'Newsand' light-ships, where there is always much floating matter washing to and fro with the tides. They were all in the plumage of the second and third summer, and I saw no adults: some had the tail banded at the tip, but more or less faded; others were nearly adult, excepting the dark markings on the false wing and primary coverts.

Common Scoter.—July 2nd. This evening, in running up the Lincolnshire coast from the Humber to the Wash, we observed, especially off the Haile Sands, large flocks of scoters flying from the shallow water in shore out to sea. Some flocks contained one hundred to one hundred and fifty birds; others not more than twenty: they looked, and I thought them, adult; but on a nearer inspection thought otherwise. Two flocks examined with a strong binocular, and which passed within long gunshot of the yacht, were composed of nearly equal numbers of males and females: the latter, however,

* Mr. St. John, in his 'Natural History and Sport in Moray,' p. 287, says: "I was assured by a man, who was constantly in pursuit of seals, that one day having found a very young one left by its mother on the rocks, near Lossiemouth, he put it into a deep round hole full of water left by the receding tide. For two hours, during which he waited, expecting to see the old female come in with the flow of the tide, the little animal remained, as he expressed it, 'like a stone' at the bottom of the water, without moving or coming to the surface to breathe. He then took it out, and found it as well and lively as ever; and on turning it loose into the sea it at once began swimming about with some other young ones."

appeared to be generally a lighter or more chocolate-brown than the fully adult female; and the males, although looking black, had a grayer appearance than the adult. In May we meet with whole flocks of scoters on the river in the immature dress, or rather changing from the immature to the mature; most of these still retain the gray cheeks and throat, characteristic of the young birds. Later in the season we find these in the mature plumage, or in a plumage generally resembling the breeding dress, but with the differences I have pointed out. I do not believe in the theory of large flocks of barren scoters remaining on our coast during the summer, but rather think it will be found that the scoter, which is a very late nester, does not breed till the third summer, the young birds only obtaining their full breeding dress after the autumn moult of the second year. The hundreds of scoters, males and females, which may now be seen off our flat Lincolnshire coast, are certainly not barren or old birds, but the young of the preceding year, which in their turn will go northward to breed.

Swift.—July 3rd. Noticed a swift hawking at sea, near the entrance to Llyn Deeps, at 3.20 this morning.

Whimbrel.—July 3rd and 4th. When in Boston Deeps we saw many whimbrel: a flock of six; another of eighteen; and two others with upwards of thirty birds in each. They flew across at low water from the Lincolnshire shore towards the sand-banks, where they feed in company with curlews, oystercatchers, and gulls: they are known to our fishermen by the name of "curlew-knot." Small numbers of whimbrel may be found on our coast during the summer. I never remember seeing them in such large flocks so early in the season: it is too early for the return of the young broods, and there are probably birds of the previous summer not breeding.

Curlew.—Plentifully distributed along our coasts, both on the sea-shore and within the Humber, where I have seen them all through the summer.

Oystercatcher.—July 3rd. A flock of about fifty, early this morning, flying from the Lincolnshire coast in the direction of the Wash sand-banks.

Guillemot.—July 3rd and 4th. Several seen fishing within the Humber and along the Lincolnshire coast, as well as off Hunstanton and in the Deeps. Many guillemots remain on this coast throughout the spring and summer, away from their breeding haunts. I find

them both by day and night, and generally about the same places,—even the same sand-banks and shoals. On the 21st, guillemots and razorbills, with the young of the year, were tolerably plentiful out at sea, between the Humber and Cromer; also, but far less numerous, between this and the Dutch coast.

Arctic and Common Terns.—On the 9th, I found five pairs of terns near some “fitties,” which extend beyond the sea-embankment in the parish of North Cotes, above Tetney Haven. This is a wild, dreary district, and one very well adapted for the nesting of our shore-birds. Landward we look across a thinly populated district, almost perfectly level, some part arable, but principally under grass, and dotted with sheep and cattle; the fields are divided by drains. Here and there, but at long distances, is a shepherd’s cottage, or lone farmstead, with a few trees surrounding it; further inland, more trees and hedgerows, with the tower of a village church rising above them; beyond this, but at the distance of many miles, the long, low line of the “wolds.” Seaward, there are the “fitties,” thickly overgrown with *Cakile maritima*, *Arenaria marina*, *Plantago maritima*, *Statice limonium*, *Armeria maritima*, *Atriplex laciniata*, and other salt-loving plants; “marram”-covered sand-hillocks lie between the “fitties” and shore, and then, like a great sandy desert, for it is low water, the dreary coast of Lincolnshire stretches away to the dim horizon, without a break of any kind to relieve its monotony, except a beacon, and the black ribs of a schooner, which came on shore some autumns since in the great October gale:—

“A coast
Of ever-shifting sand, and far away
The phantom circle of a moaning sea.”

But the sea to-day is scarcely visible, for it is so calm, and hot, and still, that no breaking foam marks the line where land ends and water commences; but in the extreme distance, against the pale sky-line, there is ever a chequer-work of black and white rising and falling, where the waves are breaking, and tumbling, and making dirge-like music, above one of those many sand-banks which fringe this coast from the Humber to the Wash. In a north-east gale it is a terrible lee-shore for the sailor: he has a sea to contend with that is pitiless, cruel, and exacting; many a good ship has struck and gone to pieces out of sight of land, and all hands been lost, without a chance of rescue. But to return to the

terns: there they were, dashing to and fro, and hovering above this waste of coast, evidently greatly annoyed by my intrusion: they flew round in wide circles, and the air seemed alive with their cries, "tic, tic, kar-a-wee, kar-a-wee." I was quite certain from their manner that they had young not far off, particularly as one, which flew in from the sea, had a small fish in its bill held cross-wise: a close search of the sand-hillocks for the nest was unsuccessful. Later in the day, from the embankment, I watched a tern alight on the "fitties," some distance within the sand-hillocks, about half-way between them and the embankment: on walking directly up to this spot, after a short search, I found the nestling crouched in a slight hollow amongst the thrift. As I held it in my hand the old bird screamed, and dashed within a few feet. It was a pretty little creature, apparently only just hatched; brownish buff, marked with streaks and spots of dark brown, and having pretty pink feet and tarsi. Placing it carefully back in the hollow, I left it to the care of its parents. Of these terns four pairs were undoubtedly arctic; the others belonged to the common species. I watched them for nearly an hour through my glass, and had no difficulty in identifying each species.

Brownheaded Gull.—July 10th. These gulls are returning in great numbers from their breeding haunts to the neighbourhood of the Humber. I have this week seen young birds of the year on the flats. A flock of several hundreds on some fallow-land this morning were nearly all adults; there were, however, a few amongst them having the banded tail.*

Knot.—I feel quite certain that birds which passed us on the 4th July in the Deeps, flying towards the Long-sand, were knots. They were not quite near enough to speak positively. There were two small flocks at Spurn, on the Humber muds, on the 17th, and some, I was told, had been seen a week previously. Those at Spurn looked like young birds.† From what I have seen of our other shore-birds this season, I am inclined to think that knots have remained on the coast throughout the summer.

Carrion Crow.—July 16th. A carrion crow, which I saw near

* In the July number of the 'Zoologist' Mr. J. H. Gurney, jun., remarks, that this spring, both at Hoveton and Scoulton gullery, in Norfolk, he saw second-year birds with black-barred tails, which apparently were breeding.

† On the 24th I saw a small flock near the mouth of the Western Schelde, near Flushing.

one of our plantations this morning, had the bastard wings light gray. It is rarely we find a variety in this species.

Cormorant.—July 17th. I noticed a cormorant this morning fishing near the inner buoy to the west of the Spurn Lights. A pair have been seen about this place for some days.

Lesser Tern.—July 17th. At Spurn, to-day, I found, near their principal breeding station, about forty pairs of the lesser terns, mainly adults; also many others along the coast, as well as immature birds; but all were well on the wing. I think there were, however, still nestlings on the shingle, as the old birds were very noisy and bold, and some carried small fish in their bills. It was too late for the eggs, and I only found one, which was rotten. A fisherman living here, who occasionally takes the eggs for collectors, says that the lesser terns, nesting at Spurn, have certainly increased since the passing of the Act; and I quite think this is the case. This year they have had a most favourable nesting season, very few eggs having been taken. In former years this man says he has taken eggs from forty nests in a day; this year there has been no demand for them. Amongst the lesser terns were a few of a larger species; the only pair which came near enough for identification were arctic terns.

Ringed Plover.—July 17th. In flocks at Spurn, young and old together. Several young birds, seen on shingles, only just able to take wing: I took up one little nestling, apparently only a few hours out of the shell. To use a common Lincolnshire proverb, this little creature "ran like a redshank" when placed on the smooth sand. One nest found, not on the shingle, but within the sand-hills: it was a shallow saucer, just large enough to hold the four eggs (which were hard sat upon), placed point to point, forming a quatrefoil; there was apparently no pavement of small stones in this nest, but the stones I found were there, only covered with fine sand which had drifted over them.

Dunlin.—July 17th. Several small flocks of dunlins on our marsh fallows. At Spurn, on the 17th, there was one flock of two hundred to three hundred on the shingles: they were very tame. I walked quietly up and looked them over, using a binocular glass, to pick out, if possible, any rarity which might have joined the company; from where I stood to the centre of the flock (I measured it afterwards) was only eighteen paces. These dunlins were in summer plumage, having the black pectoral patch, but

more or less broken into with white, and not so well defined as in the birds which leave our river-flats in the spring. I believe them to be birds of the previous summer, not yet breeding.

Gulls.—On the 3rd and 4th of July, I found the lesser black-backed gulls, with their young, numerous represented on the Wash sand-banks and along the Lincolnshire coast. There were also a few herring gulls, but these were immature birds; I did not observe either the adult or young of the year. A few great black-backed gulls were also seen, along with the young bird or “wagels,” along the coast. The brownheaded gulls, both old and young, were very numerous. At Spurn, on the 17th, there was an immense assemblage of sea-gulls of various species. East of the Point I saw thirty lesser blackbacks, all of them birds of the year, riding like boats at anchor, two hundred yards from shore, and all with heads to windward. On the Humber side of the Point there was another flock of these gulls, numbering about fifty, a few of which were fully adult. I also saw a flock of several hundred common and brownheaded gulls, with few exceptions birds of the year. Very few herring gulls seen: these have evidently not yet left their nesting stations to come south in any numbers. After the brownhead the lesser blackbacked gull is always the first to return from their breeding haunts with the young; then the greater blackbacked; and last of all the kittiwake. Several kittiwakes seen at Spurn on the 17th, but all were birds either in the second or third year's plumage.

Spoonbill.—On the evening of the 24th, when running down the Western Schelde from Antwerp, a pair of spoonbills crossed our bows, flying about mast-high and within gunshot. I was sitting on the heel of the bowsprit at the time with my glass in hand, and had a very fine view of these splendid birds; both were fully adult, and magnificent specimens: they flew like storks. I shall long remember this evening, from the brilliant sunset, all the north-western sky over Flushing sand-dunes being aglow with crimson light; the sea, which was like crystal, less deeply suffused with the rich colour; long strings and lines of wild ducks, intensely black against this bright back-ground, were flying from the Dutch coast towards the centre of the river, forcibly recalling what must often have been the scene in our Lincolnshire fens long years ago.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire,
August 2, 1872.

The Birds of the Færoe Islands. By Capt. HENRY W. FEILDEN.

HAVING passed six weeks in the Færoe Islands during the months of May and June, 1872, and having paid my best attention to their Avifauna, I am in hopes that an account of their Ornithology brought down to the present date may not be unacceptable to your readers. In compiling the following list, I have consulted the excellent paper on the "Birds of the Faroe Islands," by the late John Wolley (Cont. Orn. 1850, pp. 106—117), the valuable work of Herr Sysselmand H. C. Müller, "Færoernes Fuglefauna," (*vide* Meddel. Nat. For. 2 ser. vol. iv. pp. 1—78). The earlier writers, Olaf Worm (1655), Debes (1673), Oliger Jacobsus (1696), Mohr (1786), Landt (1800), and Graba (1828), have been referred to; and from Herr Müller I have received extracts of many interesting notes taken from the manuscript volumes of Svabo, now placed in the archives of the Royal Library at Copenhagen: this talented Færoese made an official tour through these islands during 1781 and 1782, but his worth does not seem to have been appreciated by the then Danish Government, for he died in obscurity in Færoe about 1828. In addition, I have most kindly received from Herr Müller a copy of all his manuscript notes, referring to the Ornithology of Færoe, since the publication of his work in 1862. And finally, my own notes made during my late visit.

No more concise or exact description of the Færoe Islands can be given than what I now extract from the writings of John Wolley:—

"Situate in an open sea, and also an intermediate station on the highway to Iceland, they offer a resting-place to wanderers over the ocean. Most of the islands of which the group is composed are mountains, whose foundations are far below the surface of the water, and their sides are divided into horizontal terraces from the bedding of the trap rock. In many places, especially to the north and west, there are precipices of such stupendous height as to have their summits generally in the clouds, and they are often perpendicular from top to bottom. * * * Fierce blasts of wind frequently rush down from the mountains, mist and rain are almost incessant, and the air is so damp that the sods of grass with which the roofs of the wooden houses of men are covered

are, even at the end of summer, of the most spring-like green. * * * There is, indeed, a great show of green, and in some places plenty of good grass; but generally there is a large proportion of Carices, Juncaceæ, and other plants, on a thin covering of peaty soil, and these afforded food to wild geese and swans during the summer in former times. Insects are in small numbers, but not so few but that a snow bunting can get a good mouthful for its young; snipes, too, are well pleased with their entertainment. Lakes are not numerous, but there are a few which satisfy the wants of the common wild duck (*Anas boschas*), and also of the redthroated diver (*Colymbus septentrionalis*), and they serve as fresh-water baths to continued flocks of kittiwakes. There is no heather that could be sufficient for the red grouse (*Tetrao lagopus*); no tree or even a shrub of a foot in height."

The naturalist in Færoe will not be greeted with the sight of many species of birds, but his interest will be aroused in contemplating the extraordinary numbers of some of those which make these islands their home during the period of reproduction. It is said that the sea-birds have greatly decreased during this century, and doubtless such is the case; for, besides the increased drain on the Fuglebergs owing to the extension of population, every fishing-boat which puts to sea carries a gun, which is used indiscriminately, in and out of the breeding season, against every fowl large enough for food; and if it were not for the wise laws which protect the sea-fowl in their breeding places, the enormous rock bird-nurseries of Færoe would ere this have been made desolate. The countless multitudes of puffins (*Mormon fratercula*), guillemots (*Uria troile*), and kittiwakes (*L. tridactylus*), must be seen to be believed; and the numbers of oystercatchers (*Hæmatopus ostralegus*), whimbrel (*Numenius phæopus*), and golden plover (*Charadrius pluvialis*), nesting throughout the islands is astonishing.

The number of species that have been procured in Færoe as mere stragglers is large, but not greater than the position of the islands would warrant, whilst the absence of truly North-American types is remarkable, only two, the Canada goose (*Bernicla canadensis*) and the cuneate-tailed gull (*R. Rossi*), having as yet been recorded. This must be partly owing to the want of competent observers; for, with the exception of that excellent ornithologist Herr Müller, there is no one resident in the islands who takes

much interest in Natural History. No doubt new and interesting captures of stragglers will be every now and then recorded, and perchance new species may become resident during the breeding season, as in the case of the fulmar (*Procellaria glacialis*), which first came to Færoe less than thirty-five years ago, and is now found breeding abundantly from Suderoe to Fugloe. Again, the black-headed gull (*L. ridibundus*) has nested regularly in a colony for some years past; and three years ago the little tree sparrow (*Passer montanus*), took up its abode in the islands, and seems likely to spread. I fancy the ptarmigan (*Lagopus vulgaris*), might be introduced with success, but the attempts hitherto made have failed, the birds having died on the sea-passage. I am much afraid that before many years have elapsed the noble skua (*Lestris catarractes*) will be exterminated as a breeding species, as the eagle, wild goose and swan have been.

For the first three weeks of my stay in Færoe the weather was almost continuously bad, and a succession of snow storms, varied by rain and fierce gales of wind, made travelling from island to island difficult and tedious. Towards the end of my visit the weather improved, but the hills were generally shrouded in mist, though I have seen two or three days in Færoe which, for clearness of atmosphere and warmth and brightness, might vie with the best of English summer days.

My first view of the islands, on the evening of the 15th May, was exceptionally clear and magnificent. From the deck of the steamer the whole group, from Fugloe on the north to Suderoe, stood forth clear and bold; scarce a cloud or wreath of mist obscured the highest mountain-tops: about ten, the sun disappeared in a blaze of glory, and in a short time the hill-tops were covered with a purple glow, the snowy summits of the very highest arising above the warm light; the valleys were flooded with the purest of amber hues, which, stretching far to seaward, were reflected on the ocean. Such a clear view and magnificent sunset seldom greet the voyager making the Færoes.

The traveller through Færoe must be prepared for wet and coarse weather in the spring; he ought to be stout of limb and sound in wind to scale the steep hills and scramble along the rugged tracks which do duty for roads, blessed with a fair stock of patience,—a good sailor, or else the boat journeys in heavy seas will be decidedly disagreeable; but, to counterbalance any

discomfort he may have to endure, he will receive from the kind-hearted and contented islanders every attention possible. From the best off to the very poorest the stranger meets with unbounded hospitality, and their constant anxiety is to forestall his wishes by every means in their power.

RAPTORES.

1. *Pandion haliaëtus*, Linn. Osprey. *Native name*, Orn.—Herr Müller records one young bird shot on the island of Suderoe, in 1848.

2. *Haliaëtus albicilla*, Linn. White-tailed Eagle. *Native name*, Orn.—No longer breeds in the Færoe Islands, and is only an occasional winter visitant. The boatmen, when passing Tindholm, do not fail to point out the rock on which this eagle had its eyrie, and to which the child was carried, as related by Landt:—"The mother hastened to the rock where the nest was built, and which is so steep towards the summit that the most expert bird-catchers have never ventured to climb up it; but the poor woman arrived too late, for the child was already dead, and its eyes torn out." Svabo remarks that eagles must have been frequent formerly, as its beak was ordered to be given as tax, according to royal resolution of the 21st November, 1774. Several names of places show this also, as Arnafiord by Ordevig, Arnefiord in Bordoe, &c. In Færoe the man who takes the bill of an eagle to the sheriff is exempt for life from *Næbbetold*, or bill-tax.

Herr Müller has in his collection the leg and foot of one of this species which was captured in the winter of 1860, on the island of Sandoe, during a severe snow-storm; the bird was crouching under a rock, protecting itself from the wind and snow, when observed by a man, who, stealing up, threw himself on the eagle, and wrung its neck.

3. *Falco islandus*, Gmelin. Iceland Falcon. *Native name*, Falkur.—Is not uncommon during the winter months, but has never been known to breed in the Færoe Islands. *F. candicans*, Gmelin, will, I have no doubt, also be found as a winter visitor, when the distinction between the two species is better understood.

4. *Falco peregrinus*, Linn. Peregrine Falcon. *Native name*, Falkur.—Müller records one example of this bird killed at Kollefjord on the 16th September, 1857.

5. *Falco æsalon*, Linn. Merlin. *Native name*, Smiril.—

The Merlin remains in Færoe throughout the year, placing its nest invariably in rocks and precipices extremely difficult of access. Its nest is made year after year in the same locality: in this it differs from the usual practice in Britain, where it nests on the ground. I have seen several adults in Herr Müller's collection, also the eggs. During my stay in Færoe I did not see a single example of this bird, though I am aware it is not uncommon.

6. *Falco tinnunculus*, Linn. Kestrel. *Native name*, Falkur.—Has been obtained twice in Færoe by Herr Müller.

7. *Circus æruginosus*, Linn. Marsh Harrier.—A single specimen shot at Kollefjord in September, 1869, and received by Herr Müller.

8. *Otus vulgaris*, Flem. Longeared Owl.—A specimen shot at Eide on the 16th January, 1871, and another in March at the same place.

9. *Otus brachyotus*, Forster. Shorteared Owl.—Müller records having seen several examples, but he has never found it nesting.

10. *Strix aluco*, Linn. Tawny Owl.—A specimen shot at Eide on the 16th January, 1871, and another in March at the same place, as I am informed by Herr Müller. It would appear to have been migrating in company with *Otus vulgaris*.

11. *Nyctea scandiaca*, Linn. Snowy Owl. *Native name*, Katula.—This arctic species has been noticed several times in Færoe, and in some instances these have appeared satisfied with their quarters, and have remained for a length of time. Müller ('Færoernes Fuglefauna,' p. 5) mentions one that he observed both summer and winter of 1849 and 1850. In October, 1857, an example appeared in the same place, and again in May, 1861. On the 14th September, 1863, he shot a male on Kirkeboe Rein: this fine adult specimen is now in his collection. Herr Müller suggests that these birds may have bred in Færoe: this is unlikely, for it has been seen likewise at all seasons of the year in Britain; but, as Professor Newton observes (Yarrell's Hist. Brit. Birds, p. 180, fourth edit.), "It is now-a-days allowed on all sides that the snowy owl does not breed at liberty in any part of Britain, though it has occurred in every month of the year."

INSESSORES.

12. *Muscicapa atricapilla*, Linn. Pied Flycatcher.—Müller records a single flock making its appearance in May, 1846. One was shot, and sent to the museum at Copenhagen.

13. *Cinclus aquaticus*, Bechst. Dipper. *Native name*, Aarpisa.—Svabo mentions that “Aarpisa” attempted to nest in the northern isles. Landt records it as known chiefly by name, but received one example obtained near Thorshavn. Müller has obtained it; but a stuffed example in his collection, shot three years ago near Thorshavn, is the *var.* *Cinclus melanogaster*.

14. *Turdus pilaris*, Linn. Fieldfare. *Native name*, Ouinsheâni.—Is not as regular a visitor as the redwing, up to 1862, Müller had only procured one example; but on the 30th April, 1865, one was shot out of a flock of eight, near Thorshavn, among which were two blackbirds (*T. merula*). Again, on the 18th February, 1868, a male was shot near Kirkeboe, island of Stromoe.

15. *Turdus iliacus*, Linn. Redwing. *Native name*, Ouinsheâni.—Arrives in flocks, in April and May, on their way north, and returns in September. Herr Müller informs me that on the 29th June, 1868, he observed and heard one that had remained for a longer period than usual. On the 14th July, 1869, he found a pair breeding in his garden; the nest was situated on the ground, under a willow, and sheltered by a stone in the wall, but not exactly in a hole: he took one of the eggs for his collection, and two days later another, the remaining two disappeared shortly afterwards.

16. *Turdus merula*, Linn. Blackbird. *Native name*, Roukur.—The blackbird is merely an uncertain straggler to Færoe. Landt makes no mention of it. On the 30th April, 1865, two were observed in company with fieldfares near Thorshavn. I received the skin of a male killed in March, 1872.

17. *Erythaca rubecula*, Linn. Robin.—According to Müller, not a very uncommon autumn visitant; in 1856 remaining in the islands till February.

18. *Ruticilla tithys*, Scop. Black Redstart.—On the 12th May, 1870, one of these birds was observed by Herr Müller in the garden of Governor Finden, in Thorshavn.

19. *Pratincola rubetra*, Linn. Whinchat.—A single example recorded by Herr Müller as having been seen by him near Thorshavn, on the 3rd December, 1852.

20. *Saxicola œnanthe*, Linn. Wheatear. *Native name*, Stein-stolpa.—This lively bird is abundant throughout the Færoes as a breeding species, arriving in the middle of April, and leaving in

August. Its cheery presence and pleasing song enlivens the rugged hill-sides and cheerless tracts of stone over which the traveller by land in Færoe pursues his track. I have found it nesting not far from the shore, and at every elevation except on the bare tops of the highest mountains. The nest is usually placed under a stone, and in several instances I detected it by noticing the worn track which the birds had made in passing and re-passing to the nest. I have taken nests with six and seven eggs in them, and have had them brought to me with eight.

21. *Phyllopneuste trochilus*, Linn. Willow Warbler.—Herr Müller records the appearance of this bird twice in Færoe as a rare autumnal straggler.

22. *Regulus cristatus*, Koch. Goldencrested Wren.—During their autumnal migration, this species appears not unfrequently to be blown on to the Færoe Islands. Müller records them as having been procured in October, 1852, October, 1857; and on the 21st October, 1867, he received a single specimen shot at Skaalefiord. The wind had for a long time prior been changing from southerly to westerly.

23. *Regulus ignicapillus*, Brehm. Firecrested Wren.—Is included on the authority of Herr Müller ('Færoernes Fuglefauna,' p. 7).

24. *Ampelis garrulus*, Linn. Waxwing.—Made its appearance on the 3rd November, 1852, in the Governor's garden at Thorshavn; and Herr Müller informs me that a pair were observed in the same place on the 29th October, 1866.

25. *Motacilla alba*, Linn. White Wagtail. *Native name*, Erla Kongsdottur.—Svabo writes that it builds its nests in mud-walls, and among stones, laying four and five eggs, and sits for three weeks. Landt mentions that it "is seen first in May, and the inhabitants then conclude that the expected trading-vessels have arrived at some of the islands. A few days after its arrival it in some places disappears again, but in other places it builds its nest almost in the same manner as the wheatear." Müller has noticed it in the islands from spring to autumn, but has not found it breeding. On the island of Skuoe, on the 23rd May, 1872, I noticed one feeding in a dirty gutter in the village, its spotless plumage not much in character with the locality where it was procuring food. In Eide, Osteroe, on the 11th June, 1872, I noticed another, which was undoubtedly breeding, for it carried away food in its mouth as if for its young. M. Yarrellii has not yet been observed in Færoe.

26. *Budytes flava*, Linn. Grayheaded Wagtail. *Native name*, Erla Kongsdottur.—Graba mentions having seen one in Vaagoe on the 2nd June, 1828. Müller records one example sent by him to the museum at Copenhagen, and on the 11th April, 1866, he observed one in Westmanshavn.

27. *Anthus pratensis*, Linn. Meadow Pipit. *Native name*, Graatujtlingur.—This is an extremely abundant species in Færoe, and I procured a great number of their nests; it builds from the margin of the sea to a considerable altitude on the mountain-sides; it lays as many as six eggs. A nest taken on the 16th May, 1872, contained that number.

28. *Anthus obscurus*, Lath. Rock Pipit. *Native name*, Graatujtlingur.—Is equally numerous as the preceding species, though confined to the margins of the shore. During my frequent boat-journeys throughout the Færoe Islands, this bird was constantly seen flitting along the rocks in search of its food, frequently engaged in aerial gambols with its mate. It lays four and five eggs, never more. Herr Müller informs me that he took a nest with four eggs on the 29th April, 1868; on the 4th April, 1870, he observed one carrying grass in its bill to its nest. I have remarked considerable difference in the size and colouring of these birds, and the matter is worthy of investigation by future observers visiting the Færoe Islands.

29. *Alauda arvensis*, Linn. Skylark. *Native name*, Lerkur.—Landt says, "The lark is very rare, and I do not know whether the inhabitants have any name for it." Wolley mentions having seen one pair which were probably breeding. Müller records it as arriving sparingly in April and May, and in flocks in September and October. The same writer found its nest with four deeply-incubated eggs, on the 7th July, 1856; and I have seen the eggs brought from the island of Sandoe, where it is most frequently observed.

30. *Plectrophanes nivalis*, Linn. Snow Bunting. *Native name*, Snjoufuglur.—The snow bunting is an abundant species throughout Færoe in the winter time, and a considerable number remain to breed in suitable localities. Wolley mentions that it "breeds very scantily near the tops of the mountains; but in the northernmost islands of the group, on the lower grounds, and in small colonies. A neatly-made nest, placed under a large stone, had young almost fully fledged at the beginning of July." Müller has

noticed the young ones flying in August. I visited the mountain, Losingafjald, near Westmanshavn, where Wolley found the nest and young in 1849, and though I searched carefully for hours I was not fortunate enough even to come across a bird. During my stay in Færoe the weather was as a rule so bad that the tops of the hills and likely resorts of the snow bunting were generally shrouded in mist. Only on the top of the island of Skuoe did we come across them. On the 7th June, 1872, about eight o'clock in the evening, as we were resting, my friend called my attention to the note of a bird which we did not recognize: the song was simple, but plaintive. We soon found that it came from a male snow bunting, which I shot; the female was not far off, and soon made her appearance on the stones, where she twittered for her mate: she was probably nesting close by. We commenced a search for the nest, but almost immediately dense volumes of mist stole up the sides of the mountain and enveloped us. We had to give up the search, and follow our guide in Indian file to the sea-shore. Two or three pairs of snow buntings nest yearly on Kirkeboe Rein, near Thorshavn: I made one or two attempts to find their nests about the middle of June, but the rain and mist in every instance prevented me.

31. *Fringilla cœlebs*, Linn. Chaffinch.—Recorded by Herr Müller as a straggler. On the 15th February, 1868, he observed a female in the garden of Herr Hansen, at Thorshavn: it remained thereabouts till the 1st March of the same year.

32. *Fringilla montifringilla*, Linn. Brambling.—Herr Müller observed a flock of four near Thorshavn, in the spring of 1867.

Fringilla serinus, Linn.—I insert this on the authority of Herr Müller ('Færoernes Fuglefauna,' p. 17), who records one as seen on the 15th January, 1858. With all due respect to that excellent ornithologist, I would suggest that this was probably a specimen of *Chlorospiza chloris*, Linn., which at that date had not been observed in the islands.

33. *Passer montanus*, Linn. Tree Sparrow. *Native name*, Spoarve.—Three years ago a few pairs of these birds made their appearance on the island of Skuoe: they probably found their way there from the rigging of some passing vessel, and finding that the place agreed with them they have become quite naturalized, and have already spread to the neighbouring island of Sandoe. The "spoarve" is not a favourite with the people of Skuoe: it has

increased so much as to be a perfect pest, eating the seeds when sown in the little crofts, and damaging the gardens. The inhabitants wage unremitting war against them, robbing and destroying their nests. I noticed several pairs of them in the village of Skuoe on the 23rd May, 1872, and procured one nest with four eggs, which was built in a chink of a wall. After shooting one specimen the rest became so wary that I was unable to procure another.

34. *Chlorospiza chloris*, Linn. Greenfinch.—One found dead on the sea, close to the shore of Hoidenor, 10th December, 1865, as I am informed by Herr Müller, who also found one dead near Thorshavn, 24th April, 1869. On the 16th January, 1871, one shot near Eide, and many seen in several places.

35. *Fringilla linaria*, Linn. Mealy Redpole.—Müller ('Færoernes Fuglefauna,' p. 18), writing in 1862, says: "I have seen but one example of this bird, and I sent it in 1847 to the museum in Copenhagen." Whether this specimen was not *Fringilla rufescens*, *Viellot* (lesser redpole), is worthy of enquiry; for on account of the difference of opinion that exists, as to which species Linnæus referred to as his *F. linaria*, some confusion has arisen. I think that both species of redpole have occurred in Færoe; and if my memory does not deceive me greatly, Herr Müller has a specimen of the lesser redpole in his collection. In September, 1861, he informs me that he observed ten *Fringilla linaria* in his garden. On the 23rd May, 1872, a boy brought me in the island of Sandoe a fine specimen of the mealy redpole, which he had noticed in the morning pursued by a cat: the bird was so overcome by fright that it allowed the boy to pick it up; he took it to his home, but it died in the course of the day: its beautiful plumage and the enlargement of the *testes* induce me to think this bird was breeding. Another specimen was procured, near Thorshavn, about the same time, and given to me.

36. *Loxia curvirostra*, Linn. Common Crossbill.—Müller records their appearance in September, 1861. He has since received a pair from Naalsoe, 10th July, 1868. At the same time one was observed at Nardregjou; and a male was shot near Fundings Fiord.

37. *Sturnus vulgaris*, Linn. Starling. *Native name*, Steari.—Is resident, and spread throughout all the islands. It rests in clefts of the rock, and also in the walls of stone out-houses. I took a nest in Skuoe, containing five fresh eggs, on the 23rd May;

on the same date I saw the old birds carrying food to their young, and could hear the young ones chirping. On Sandoe, by the 22nd May, I found young ones well feathered. Near Eide, Osteroe, I noticed them nesting in a colony in the rocks.

38. *Pastor roseus*, Linn. Rosecoloured Pastor.—Observed at Kollefjord, in October, 1853; and again in Naalsøe, on the 19th September, 1855 ('Færoernes Fuglefauna,' p. 16).

39. *Corvus corax*, Linn. Raven. *Native name*, Ravnur.—Is abundant, but not as numerous as I expected it to be; the general possession of guns by the inhabitants, and the *Næbbetold*, or bill-tax on birds of prey, seems to have reduced their numbers. It is admitted now on all sides that the speckled and mottled ravens (*C. leucopheus*, Viellot), not unfrequently found in Færoe, is a variety, and not a good species. Svabo remarks that the raven is named Gorpur in the old Færoese song about birds; and after it, mention is made of the whitebreasted raven; therefore he thinks the mottled variety has been known from old times. Landt considered it a variety, and refers to speckled and pure black birds being found in the same brood. Wolley saw the black and white variety: two were shown to him alive, which came out of the same nest with purely black ones; he remarks that they had none of the characters of a species. Müller is of the same opinion, and informs me that a pair of ravens, that nested near Saxen, not unfrequently had one of the young pied, but for two years following they were seen flying with four or five pure black young ones. I saw five or six ravens flying in company at Sorvaag, and one of them had a white patch on the scapulars.* *Næbbetold* is of very ancient date: Debes calls it an agreement of old times, by which every man that enters into a boat is obliged to pay it. In the *Lawthing* book, 1686, it is stated that the Sysselmen have not given satisfactory account of the tax. In 1707 the Sysselmen are warned to pay the arrears of this tax; 1723, the sheriff reminds the Sysselmen of this duty; whilst in 1740, the inhabitants complain that the Sysselmen do not do their duty, and that the birds of prey increase. Upon this complaint the royal resolution to the sheriff, dated 21st November, 1741, was issued, which commands the Sysselmen to count all the men for

* I received the bills of a raven's brood, taken on the 3rd May, 1872, from a nest near Ore, island of Osteroe; one of the bills, with the bristles attached, was quite white.

Næbbetold between fifteen and fifty; the inhabitants of Thorshavn alone to be excepted, as they have no ground. The *Næbbetold* is to consist of one eagle, raven, or like bird of prey; one raven's brood; or the bills of two crows or great blackbacked gulls. The *Næbbetold* is to be carried yearly to Thorshavn, to be counted and destroyed. The same law remains in force to this day, with the addition of *Lestris catarractes* being added to the proscribed list, on the recommendation of Svabo, in 1782, who remarked their plundering habits. At the present day the *Næbbetold* is no longer brought to Thorshavn, but is counted and burnt in the presence of the judge when he makes his annual circuit. I accompanied the judge to the island of Osteroe last May; when the business before the court had been concluded, a good-sized bag was produced full of bills, which were duly counted out in the presence of the judge by the Sysselmand: raven's bills to the number of 46, and 526 bills of crows, great blackbacked gulls, and common skuas, the equivalent of 309 ravens in all, were the contents of the bag; but as there are 520 men in Osteroe within the prescribed age, 211 men failed to pay the tax; and the Sysselmand would have to collect the fine of four marks (about eighteen pence of our money) from each of the defaulters. The bills were then taken outside, placed on a pile of hay, and burnt in the presence of the judge, who signed a paper to that effect. In 1869, the last year in which the *Næbbetold* was brought to Thorshavn, it produced for the whole of the islands:—163 ravens, 1213 crows, 193 great blackbacked gulls, and 250 common skuas.

40. *Corvus corone*, Linn. Carrion Crow. *Native name*, Hjaltslands kraaka.—I include this bird on the authority of Herr Müller, who says ('Færoernes Fuglefauna,' p. 13), "Is seldom seen here." The inhabitants do not seem to appreciate the difference between the carrion crow and the rook, for they have the same name in Færoese, which means "Shetland crow."

41. *Corvus cornix*, Linn. Hooded crow. *Native name*, Kraaka.—The hooded crow is semi-domesticated throughout the islands. Impudent and voracious, you see it loitering about kitchen-doors, waiting for refuse that may be thrown out: it is a constant attendant on the fishing-boats when they return from the sea, for the fishermen gut and wash their fish on the rocks as soon as they come to shore, and the fish-offal thrown back into the water collects many species of birds to the banquet. There you find the

hoody, apparently as tame and innocent as a chicken in the poultry-yard, but his watchful eye is never off one,—bring a gun, or hold a stick in a suspicious manner, and he is at once on the *qui vive*, and will with marvellous aptitude keep just out of gunshot. Landt calls them thievish and mischievous birds; but in Færoe they certainly play the part of useful scavengers. Wolley remarks:—"The raven, but still more the hooded crow, is almost a domestic bird in Færoe, and very abundant." Herr Müller informed me of an incident in reference to this bird and its young, which shows the hooded crow in the light of a faithful parent. Near Thorsvig, island of Stromoe, a nest of this bird was found in a ravine; the young ones were supposed to be killed, their upper mandibles cut off and the bodies left on the ground; one of the young, however, had not been killed, for shortly after it was seen flying with the old birds who fed it: it was subsequently shot in the month of August, so that for nearly four months it must have been supported by the parent birds.

42. *Corvus frugilegus*, Linn. Rook. *Native name*, Hjaltslands-kraaka.—Appears in Færoe generally as a straggler, though sometimes in flocks. Müller writes, that in March, 1855, he saw a large flock of them. One was killed near Thorshavn on the 6th February, 1868; and I was shown the skin of one in Suderoe, which had been killed there the previous winter, and its owner considered it a rare and valuable bird.

43. *Corvus monedula*, Linn. Jackdaw.—Müller records this bird as a rare straggler, and he has only procured three examples of it.

44. *Picus major*, Linn. Great Spotted Woodpecker.—Müller got two examples of this bird in September, 1861; he also received one from Qualvig, 1st October, 1868, after north-east winds for three weeks; one from Nar; and one from Argehodde, found dead, the same month.

45. *Jynx torquilla*, Linn. Wryneck.—One of these birds was found dead in Thorshavn, 12th September, 1867; and Herr Müller also received it in 1865 and 1866.

46. *Troglodytes borealis*, Fischer. Northern Wren. *Native name*, Mousabrouir.—This species of Wren is spread throughout the Færoe Islands, abundant in those parts where there are no rats or mice, and consequently where cats are not encouraged; but where the cat is numerous you may look in vain for this sweet

songster. I made my first acquaintance with it on the island of Skuoe, on the 23rd May: there they are to be seen about the village in considerable numbers, running in and out of the chinks between the stone-built cottages like mice; then alighting on the grass roofs, and with outspread wing and swelling throat pouring forth a stream of melody far exceeding that of *T. parvulus*. As soon as it was known that I wanted “Mousabrouir” nests and eggs, a brisk search commenced: boys, girls, and women, aiding in it. I was taken from outhouse to outhouse to look at nests; all were exactly alike: outwardly a firm structure of hay; next a lining of moss; then a snug bed of down and sea-fowl feathers. All the nests I saw were placed in the same position, namely, between the blocks of stone of which the outhouses are built, the entrance to the nest invariably facing inwards. I examined seven or eight nests in this village: one only had eggs; the rest had young two or three days old. On the island of Great Dimon I found the wren numerous, and discovered its nest in a cave close to the landing-place, far away from the habitations of men. At Porkerii, on the 30th May, 1872, I noticed a brood of five following their parents in and out of the boat-houses. In the northern islands it is abundant: in Swinoe, on the 7th June, I saw a brood following their parents, who collected them together with a chirp, and then fed them with insects that they had picked out of the gutter. The same day I put my hand into a nest and drew an old one out of it: it flew a few feet from me, perched on the gunwale of a boat, and broke out into a merry song. Before I left the boat-house the wren returned to its nest. When I staid in the pastor’s house, at Videroe, I was awakened in the morning by the song of this bird close to the open window, so loud and so melodious that no one could help noticing the difference between its note and the more feeble efforts of our common wren.

47. *Cuculus canorus*, Linn. Cuckoo.—Herr Müller records one from the island of Naalsoe, July, 1861; a second in July, 1862; and an old male was shot, near Kollefjord, on the 16th June, 1864.

48. *Hirundo rustica*, Linn. Swallow. *Native name*, Sveala.—Appears in Færoe in May, sometimes in considerable numbers, but has never been known to breed there. I saw a pair at Qualboe, island of Suderoe, on the 28th May, 1872; I shot one of them, which proved to be a female. I saw a single bird flying over a small lake in Osteroe, on the 11th June.

49. *Cypselus apus*, Linn. Swift.—Wolley records one as seen by him at the end of June, 1849; one was captured at Westmainshavn on the 21st June, 1864; and Herr Müller received another on the 24th May, 1871, found dead in the schoolhouse of Thorshavn.

50. *Caprimulgus Europæus*, Linn. Nightjar.—Herr Müller received it in the summer of 1859; on the 25th May, 1871, one was shot at Sund; and on the 20th July, 1871, another was taken on Skuoe.

RASORES.

51. *Columba palumbus*, Linn. Ring Dove. *Native name*, Digva.—Herr Kreuser, of Eide, informed me that he saw several about Eide in the winter of 1871; Müller received one from Kalbak, 1st June, 1865; in the middle of November, 1868, many were seen at several places in the islands, and several were shot.

52. *Columbia livia*, Linn. Rock Dove. *Native name*, Blaadigva.—Is abundant, and remains in the islands throughout the year, breeding twice; but owing to its nesting-places being in very inaccessible parts of the cliffs and, generally in caves, difficult of access, I did not procure an egg of this species myself. I saw a pair of half-fledged young ones on the 14th June, taken on Myggencæs; most frequently we saw them on the newly-sown barley-fields, where they commit a good deal of damage. They were numerous and comparatively tame in Swinoe, where I shot a couple on a barley-field, with their crops full of that grain; five or six others alighted close to me whilst I was reloading the gun.

53. *Turtur auritus*, Gray. Turtle Dove. *Native name*, Turtuldigva.—Herr Müller records only two captures of this bird: one in July, 1857; and another on the 10th October of the same year, from the island of Naalsole.

54. *Syrnhaptes paradoxus*, Pall. Pallas' Sand Grouse.—On the 8th June, 1868, Herr Müller received a young bird from Kirkeboe, island of Stromoe; on the 10th of the same month, two males from Kalbak, on the same island: these were shot in the sown barley-field, and had their stomachs full of grain. Later, two more were seen about Thorshavn; and in the middle of September Herr Müller saw them himself on Kirkeboe Rein. Thus, within a radius of a few miles from Thorshavn, we find that five of these birds were either killed or observed. Doubtless many more settled throughout the Færoe Islands, but were not taken notice of by the inhabitants.

55. *Coturnix vulgaris*, Flem. Common Quail.—Has been found not unfrequently in Færoe as a summer visitor. Herr Müller received nine eggs from a nest, taken near Qualvig, on the 1st October, 1865; and another nest was procured in Sandoe, August, 1866, containing six eggs.

H. W. FEILDEN.

(To be continued.)

Ornithological Notes from Norfolk.

By HENRY STEVENSON, and J. H. GURNEY, jun., Esqrs.

(Continued from Zool. S. S. 3134).

JUNE.

Heron.—On the 15th several young birds were observed on Salthouse beach, which had no doubt come from Gunton Lake, where there is a small heronry, the existence of which was until recently unknown to us. Nine were seen the same day at Overstrand. I find that Costessey heronry is now deserted.—G.

Tree Creeper.—On the 7th Mr. Norgate showed me a tree creeper at Sparham sitting upon some young blue tits. He had introduced the eggs with a salt-spoon at the time he had taken the creeper's.—G.

Pied Flycatcher.—On the 3rd Mr. Norgate took two eggs, which appear to be evidently pied flycatcher's, from a nest of four on some trellis-work on the south side of Mr. Marsh's house at Sall. The old birds had been seen near it a few days before.—G.

Greater Whitethroat.—About the 5th a pied whitethroat was shot at Heigham, which I secured.—G.

Reed Warbler.—On the 19th, at Hempstead, Mr. Cordeaux and I found a nest with two eggs, two with one egg, and one building, and one which we could not see into.—G.

Rook.—On the 19th I observed a rook with white primaries in a field at Aylmerton.—G.

Nightingale.—Mr. Crowfoot informs me that the nightingale seems to be much increasing at Beccles, and that it has nested this summer in several gardens in the middle of the town.—G.

Carrion Crow.—On the 1st Mr. Norgate took four nests at Bawdeswell.—G.

Lesser Tern.—On the 14th and 15th Mr. H. Saunders and myself saw a great many at Blakeney Point and on Salthouse

beach, evidently breeding at the former if not at the latter place, as we saw two carrying food to their young. The eggs are very hard to find without a good dog. This species greatly outnumbers the common tern, of which only three were seen.—*G.*

Common Tern.—On the 15th Mr. E. L. King found more than a dozen nests on Wolferton beach. "Only one," he says, "contained young, and that nest had only one bird off, but the shells of the other two eggs were pierced and we could hear the young in them squeak."—*G.*

JULY.

Robin.—On the 18th I saw a wild robin throw up a pellet.—*G.*

Hooded Crow.—One seen on the 3rd by the keeper. He once saw three about nearly all the summer, but believes that these are only wounded birds which stay behind.—*G.*

Wren.—On the 18th I saw a nest in an old hat. On the 24th of last July Mr. Baker, of Cambridge, showed me a wren's nest in a human skull. A tuft of dead brake is a favourite place about here. My father hands me the following note:—"On the 9th July a nest of the common wren was found at Northrepps, the interior of which was entirely filled with the comb of a humble bee (*Bombus muscorum*, Linn.). The nest appeared to be of this year's construction, but whether abandoned before the wren's eggs had been laid in it or after the young had flown could not be ascertained. The nest was built in a tuft of dead brake, about fifteen inches from the ground, and was constructed of moss, well lined with pheasant's and other feathers. The comb in the nest consisted of sixteen cells, from four of which the occupants appeared to have already emerged. Only three bees were found about the comb, a female and two workers, which were all extremely unwilling to leave the nest. The interior of the mossy part of the wren's nest swarmed with very minute spider-like insects, which ran about the moss with great activity."—*G.*

Common Skua.—On the 15th Mr. Howard Saunders informs me that he saw a common skua close in shore at Cromer. It is the first I ever heard of in England at this season of the year.—*G.*

Gannet.—On the 16th a small flock of old birds were seen at Cromer by Mr. Saunders. It is an odd date for them.—*G.*

Lesser Redpole.—On the 17th my father observed a redpole. I am assured that none have been seen in this parish until this year. Mr. Norgate has seen five more nests at Sparham (cf. Zool. S. S. 8132).—*G.*

Guillemot.—In the beginning of the month some young were seen off Cromer by a fisherman. It appears that some of the young *Alcadæ* wander down here from Flamborough long before they are able to fly.—*G*.

Woodcock.—One was brought to me on the 22nd from Roughton by a woman whose children had found it near the telegraph wire. It was living, but its wing was broken in two places. It was very amusing to see it bore for worms in a damp sod, and the quantity it disposed of during the four days it lived was "a caution." It would take them out of my hand the day after it was caught. I observed many interesting traits which were new to me, for instance, a habit it had of sometimes scratching its beak with its foot after feeding.—*G*.

Common Sandpiper.—On the 26th I saw one perch on a rail at our village pond. This species does not breed in Norfolk (B. of Norf. vol. ii., p. 232).—*G*.

Pheasant.—Among the young pheasants there is a hybrid between a fowl and a pheasant. Old hybrids of this description have often come under my observation, chiefly tame bred.—*G*.

Wryneck.—It is well known that the wryneck may be induced to lay a large number of eggs. On the 13th of July a collector in this county took his *forty-second* from a pair which had been deluded into building in a stump prepared expressly for them. As this number exceeds anything I ever heard of before I applied for the details, which my friend supplied as follows:—"I first noticed the wryneck's nest on the 29th of May, when there were four eggs in it. I took three eggs away. On the 3rd of June I took away five more eggs, leaving one egg. On the 4th of June I took another egg, and on the 5th the bird did not lay (in the box), so I took the remaining egg, leaving the box empty. On the 7th of June there were two more eggs in the box, and I took an egg every morning until the 22nd, when I was unable to find the box unoccupied. After that I generally took an egg every day, but sometimes the bird missed a day and sometimes I missed a day, and then took two or three eggs at once. On the 13th of July I took the last or *forty-second* egg, which she seemed determined to hatch (the *forty-two* eggs were all full-sized); the *forty-first* egg also was slightly sat on. Whenever I heard the cackling loud and within a few yards of the box, I used to go and rob the nest, which was then unoccupied by the bird. Since the 13th of July I have not heard or seen a wryneck

anywhere." On the 7th of June I saw the nest of this persecuted couple,—a hole in a dead stump (close to the house), which my friend had cut and made a lid to.—G.

Peregrine Falcon.—On the 22nd one was seen by Mr. Saunders flying past Cromer in a southerly direction.—G.

Little Auk in Summer Plumage.—The other day my father obtained a little auk in full summer plumage—newly set up, and still smelling very high—of the birdstuffer at Lynn, who stated that it had flown on board a ship, about the 15th of July, at a distance of about five miles off the mouth of the harbour. The wings are faded brown, which my father says is last year's plumage: the rest of the bird is the usual glossy black. This is not the first time it has occurred in summer plumage. Mr. Stevenson has one he had in the flesh from Wells about the 26th of May, 1857 (Zool. 5758); and I have another,—a bad specimen, but in complete plumage,—which I bought as having been got at Surlingham two years ago by Mr. Adcock. Mr. Tillard, of Blakeney, has also one in half summer plumage, which was got there.—G.

Ornithological Notes from Lancashire.

By Baron A. VON HUGEL.

Sedge Warbler.—On the 3rd of May I found, in a small marsh, a nest of this species, with five fresh eggs of a very unusual colour. Two of them, with the exception of a few minute and faint spots, were quite white; the other three were also white, but were marked at the large end with a few irregular light reddish-brown blotches, which were again almost covered with very minute dark brown streaks and spots.

Willow Warbler.—In the beginning of June I was shown a willow warbler's nest, which was placed at (or rather *on*) the extremity of a branch of a small fir, full sixteen feet above the ground. The nest, which was very well concealed, owing to the number of small twigs, was built of the usual materials, and contained three fresh eggs. No instance, I believe, is on record of this bird's nest being found at such a height from the ground.

Nightjar.—These birds are very numerous in this neighbourhood. Almost every evening after dusk they may be heard close

to the house. On several occasions I have heard them as late as midnight. I believe that they emit their peculiar jarring note as well when flying as when perched, as I have often listened to the "jar," which proceeded from somewhere close to my window, although there is nothing near my window on which these birds would be likely to settle.

Spotted Flycatcher.—I found, on the 12th of June, a very curious nest of the spotted flycatcher. It was placed at the end of a hole in an old wall, about four feet from the ground, and was composed almost entirely of rabbit-fur. For the lower part of the nest some moss and a few leaves had been used; the rest consisted of the above-mentioned fur interwoven with a few cow- and horse-hairs. It contained five hard-set eggs, which the female was very unwilling to leave, letting herself almost be caught on the nest. The nest, which was of a round shape, measured seven inches and one-eighth in diameter, and the inside or cavity, which was remarkably shallow, was about three inches broad by barely half an inch in depth. This is by far the largest nest of this species that has come under my notice.

Black Redstart.—On the 13th of June I observed a very fine adult male black redstart sitting on a hedge close to a road. It was remarkably tame, allowing me to approach within three yards of it before it took flight, and then only to settle again on the nearest bush.

Song Thrush.—This year I have found three nests of the song thrush in this neighbourhood with quite spotless eggs of the usual light blue ground colour, and several others which contained almost spotless ones. These are certainly not in all cases the second laying or batch of eggs, for in one of the above-mentioned instances I ascertained it to be the first laying, as I had seen the nest in which they were found being built, almost from the very beginning. I also received two other varieties of thrushes' eggs, which, from their similarity, must have been taken from the same nest: they are of the usual ground colour, but instead of the usual spots they have at their thick ends several large irregular blotches of a dark brown, with overlying black spots; besides these they are marked with a few faint minute spots and streaks: they were found in this neighbourhood.

Peewit and Common Sandpiper.—Whilst walking along the reservoir of Stonyhurst, some weeks ago, I was much surprised at

seeing three young lapwings, that could not have been hatched many days, on seeing me, boldly take to the water and swim out for about twelve yards into the reservoir, where they remained screaming till I had gone on a little way, when an adult lapwing (most likely the mother) settled near them on the water, and after swimming round them for several times, she swam to shore with her little ones. It was a remarkably pretty sight to see the tiny downy lapwings on the water, swimming much after the fashion of young moorhens. The old lapwing seemed to me to be remarkably buoyant in the water. On several occasions this year I observed the common sandpiper swimming in the Hodder from one stone to another, evidently searching for food, and I was also told that a young one of this species, on being frightened by my informant, immediately took to the water, but did not dare to cross the river, and soon returned to the shore, when it was caught. This sandpiper breeds in considerable numbers all along the Hodder and Ribble, but especially on the banks of the former river. If the first laying of eggs, which consists of four, is taken, a second batch of three (sometimes only of two) eggs is laid, generally on the very same spot where the first eggs were laid. The second lot of eggs are generally less mottled than the first, being usually either of a cream-colour with dark blots only at the thicker end, or quite spotless. These birds do not always lay their eggs near water, for in several instances I have found them full a hundred yards from the river, and in very dry situations.

A. VON HUGEL.

Stonyhurst, near Blackburn,
July 28, 1872.

Wild Birds' Protection Act.

THE following is the text of the Act which received the royal assent on the 10th inst.:—

CHAPTER 78.—An Act for the Protection of certain Wild Birds during the Breeding Season. [10th August 1872.]

Whereas it is expedient to provide for the protection of certain wild birds of the United Kingdom during the breeding season:

Be it enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal,

and Commons, in this present Parliament assembled, and by the authority of the same :

1. That the words "wild bird" shall for all the purposes of this Act be deemed to include the birds specified in the schedule to this Act; the word "sheriff" shall include steward and also sheriff substitute and steward substitute.

2. Any person who shall knowingly or with intent kill, wound, or take any wild bird, or shall expose or offer for sale any wild bird recently killed, wounded, or taken, between the fifteenth day of March and the first day of August in any year shall, on conviction of any such offence before any justice or justices of the peace in England or Ireland, or before the sheriff or any justice or justices of the peace in Scotland, for a first offence be reprimanded and discharged on payment of costs and summons, and for every subsequent offence forfeit and pay for every such wild bird so killed, wounded, or taken, or so exposed or offered for sale, such sum of money as including costs of conviction shall not exceed five shillings, as to the said justice, justices, or sheriff shall seem meet, unless he shall prove to the satisfaction of the said justice, justices, or sheriff that the said wild bird was or were bought or received on or before the said fifteenth day of March, or of or from some person or persons residing out of the United Kingdom: Provided nevertheless, that every summons issued under this Act shall specify the kind of wild bird in respect of which an offence has been committed, and that not more than one summons shall be issued for the same offence.

3. Where any person shall be found offending against this Act, it shall be lawful for any person to require the person so offending to give his Christian name, surname, and place of abode, and in case the person offending shall, after being so required, refuse to give his real name or place of abode, or give an untrue name or place of abode, he shall be liable, on being convicted of any such offence before a justice of the peace or the sheriff, to forfeit and pay, in addition to the penalties imposed by section two, such sum of money not exceeding ten shillings as to the convicting justice or sheriff shall seem meet.

4. All offences mentioned in this Act, which shall be committed within the jurisdiction of the Admiralty, shall be deemed to be offences of the same nature and liable to the same punishments as if they had been committed upon any land in the United Kingdom, and may be dealt with, inquired of, tried, and determined in any

county or place in the United Kingdom, in which the offender shall be apprehended or be in custody, in the same manner in all respects as if they had been actually committed in that county or place; and in any information or conviction for any such offence, the offence may be averred to have been committed "on the high seas," and in Scotland any offence committed against this Act on the sea-coast, or at sea beyond the ordinary jurisdiction of any sheriff or justice of the peace, shall be held to have been committed in any county abutting on such sea-coast, or adjoining such sea, and may be tried and punished accordingly.

5. Where any offence under this Act is committed in or upon any waters forming the boundary between any two counties, districts of quarter sessions or petty sessions, such offence may be prosecuted before any justice or justices of the peace or sheriff in either of such counties or districts.

Schedule.—Avocet, bittern, blackcap, chiffchaff, coot, creeper, crossbill, cuckoo, curlew, dotterel, dunbird, dunlin, flycatcher, godwit, goldencrested wren, goldfinch, greenshank, hawfinch or grosbeak, hedgesparrow, kingfisher, landrail, lapwing, mallard, martin, moor (or water) hen, nightingale, nightjar, nuthatch, owl, oxbird, peewit, phalarope, pipit, plover, plover's-page, pochard, purre, quail, redpoll, redshank, redstart, robin redbreast, ruff and reeve, sanderling, sand grouse, sandpiper, sealark, shoveller, siskin, snipe, spoonbill, stint, stone curlew, stonechat, stonehatch, summer snipe, swallow, swan, swift, teal, thicknee, titmouse (longtailed), titmouse (bearded), wagtail, warbler (Dartford), warbler (reed), warbler (sedge), whaup, wheatear, whinchat, whimbrel, wigeon, woodcock, wild duck, wood lark, woodpecker, wood wren, wren, wryneck.

Another Rhinoceros at the Zoological Gardens.—In the May number of the 'Zoologist' (S. S. 3057) I recorded the arrival of a rhinoceros at the Zoological Gardens. It was reported to have been captured at Chittagong, and to be identical with a species described by Sir Stamford Raffles under the name of "Rhinoceros Sumatranus," and was therefore announced under that name in the 'Zoologist.' It now appears that the name was given prematurely, that it is a species previously unknown to Science, and unnamed, and it is proposed to call it "Rhinoceros lasiotis," on account, I presume, of the fringe of long hairs on the margin of its ears. During the last fortnight another hairy rhinoceros has arrived from the East, and

this, like the former, but I trust more correctly, is supposed to be the Rhinoceros Sumatranus. We have now four species of rhinoceros in the Gardens, 1, Unicornis (Asiatic); 2, Bicornis (African); 3, Sumatranus (Asiatic); and 4, lasiotis (Asiatic). Two others, Sondaicus (Asiatic) and Simus (African) are known to exist.—*Edward Newman*.

Death of the Chinese Stag at the Zoological Gardens.—I am sorry to have to record the death of the Chinese stag (*Cervus Davidianus*): it died a week back of severe inflammation in the intestines. I have prepared a few pages on this stag and the new rhinoceros, which I hope may appear in the October 'Zoologist' and prove interesting to my readers.—*E. Newman*.

Ornithological Notes from Guernsey.—Swifts have been very numerous this year; as a rule, they are by no means common birds with us; a few hang about the cliffs, but never come into the town: this year, however, they have been seen in the streets. On the 13th of May, in the evening, I noticed a flock of swifts, about seven, flying over the field close to the house. It was a very wet evening. They were flying high: I watched them for some time. May 14th.—The swifts were not to be seen in the morning, but in the evening they came again: it was a wet evening. 15th.—Saw the swifts again in the evening. After flying about for some time they went off to the north, and have not appeared again since: it was a very fine day. I saw some swifts in Couch's shop; he said they had been shot out of a large flock, and that they were so numerous that they could almost have been knocked down with stones. June 1st.—Noticed two house martins; these are seldom seen. I wonder if the granite soil has anything to do with it; perhaps it is more difficult for them to get the mud they like for their nests, and this wet summer might have made it easier for them. 8th.—The weather has been bad; I noticed that just before it leaves off raining the swallows and house martins, for they are plentiful now, begin to be very busy catching food. While it rained continuously these birds did not appear; and though it might be raining hard when they came from their hiding-place, yet in about ten minutes after they came out the sun was sure to be shining. I suppose there must be some sort of fly or insect that is only to be found when it is going to leave off raining. I have seen several spotted flycatchers. 14th.—Saw some choughs on the cliffs. The gulls are more numerous since the Protection Act has been enforced here. I watched a curiously-marked swallow feeding its young in the nest: all round its head was a line of white, like the frill of a cap.—*C. B. Carey; Candie, Guernsey*.

Spotted Flycatcher.—July 15th.—A pair of flycatchers have reared their young in a nest close to my window. If wholly undisturbed, the parent birds when feeding their young appear never to utter any note; and, though now

nearly ready to fly, I have never heard the young utter even the faintest sound of recognition, pleasure, eagerness, or other. If any person be near when the old birds, with insects in their mouths, perch on a neighbouring branch, to look about them, they utter two similar "clicks," with occasional repetitions, awaiting the departure of the spectator, or their conviction that all is right: if a cat be near, the old birds utter two or three notes, the first of which differs entirely from the others, frequently repeating this warning so long as the cat remains. July 16th.—The young flycatchers, in a bright warm sun, are standing up in the nest, or on the side of it; and now they are quitting it for the first time, and, flying to a beech tree close by, are settling on the sunny side of the large leafy tree. No longer silent, they take good care to let the old birds know where among the leaves they are to be found. Later in the day I perceive the young birds have removed to a different part of the tree, influenced probably by the sun, which has left their early resting-places in shadow. If the old birds bringing food find any one under the tree, they utter sounds, unheard before, enjoining silence, and are obeyed. The birds do not return to the nest at night.—*W. H. Wayne; Much Wenlock.*

Swallow and Martin, or Chimney Swallow and Eave Swallow.—Macgillivray would prefer the name "redfronted swallow," because it builds much more frequently *not* in chimneys than in them; and the martin (house martin) is so true an *Hirundo* that he says it were well to call it a swallow, and, with perfect consistency, he would have them "the red-fronted swallow" and "the white-rumped swallow." I observed the first pair of swallows this year on the 23rd of April, and on the 28th "the white-throat and more swallows." In a few days they were numerous, and I was struck with the decided preference they gave to the chimney-tops for alighting, and often in the smoke. May not this be one reason for the name "chimney swallow"? The martins did not come till about the 10th of May, and were remarkable and distinguished by flying up under the tiled eaves of houses, and clinging there on the perpendicular walls. What became of both at night I know not. I had been struck with the large number of swallows, but when the martins became numerous the swallows so wholly disappeared that in many a week not one have I recognized. I am convinced they are no longer in this little town, and suppose they are nesting in sheds and other buildings in the country about, placing their nests very frequently on the surface of beams and other timbers. Are some of them likely to have left for the rocks three or four miles from the town? June 9th.—The martins are beginning to build early this morning in the corner of an accustomed window of my house. So far as I see, the martins are everywhere in the town placing their nests under the eaves of the houses or at the corners of windows; the swallows here never doing so that I can see.—*Id.*

[I most sincerely hope that none of my correspondents will introduce new

English names for birds: with regard to scientific names I am unable to stand alone against the mania for name-changing, but I must protest against new English names. The usefulness of Macgillivray's excellent work is greatly impaired by the introduction of new English names.—*E. Newman.*]

Redpoll breeding at Huddersfield.—It may interest your correspondent Baron A. von Hügel (S. S. 3147) to know that the lesser redpoll breeds quite abundantly throughout this district. The nests occur both in the woods and hedges, sometimes quite close to the town.—*G. T. Porritt; Huddersfield, August 7, 1872.*

Lesser Redpoll and Twite.—In the July number of the 'Zoologist' (S. S. 3147) an interesting letter appeared on the breeding of the lesser redpoll in Lancashire. The northern part of the county is particularly well suited to this species, and it is hardly a matter of surprise that it occurs near Stonyhurst. The fact is it breeds regularly on the lower land in South Lancashire and also all over Cheshire; and I think that it is a mere accident that counties have not been enumerated before, for the fact has been well known those to local ornithologists. The twite also nests every year on the mosses in which this neighbourhood, such as Chat Moss, Risley Moss, Carrington Moss, I think has been a little overlooked. Mr. Neville Wood, as quoted by Yarrell, says that "This species breeds in Staffordshire and Derbyshire, but exhibits a partiality to the higher grounds;" but the localities named are remarkably low, and I should say rather that they prefer an open moorland to an enclosed country.—*Francis Nicholson; Bowdon, Cheshire.*

[I hear that some years back the redpoll nested annually in the Withy Bed, a damp spot by Catshall Mill, near Godalming, in Surrey. I fancy there is some misconception, or rather traditional error, about this interesting little bird: my experience would lead me to give swamps and streams abounding with alders as its favourite haunts: I have not seen it on high or dry grounds.—*E. Newman.*]

Birds at Glenarm.—I have seen several pairs of siskins this summer in Glenarm Park, feeding on grass-seeds by the side of a fir-plantation, where, I have not the slightest doubt, if time permitted, their nests might have been found. I have seen two females shot at this place with their breasts quite bare from incubation; and on the 12th of July, a very stormy day, a young siskin in nestling plumage took refuge from the storm through an open window, and was found dead next morning. I have also seen several pairs of the lesser redpoll, in the same locality, conveying food to their young. The following instance of a curious site for a flycatcher's nest occurred here:—The nest was built within that of a blackbird's. The blackbird's nest was placed in the hole of a bare wall; the nest was robbed, and a flycatcher took possession of it and built her nest, and reared four young in safety.—*T. Brunton; Glenarm Castle, Farne, North Ireland, August 14, 1872.*

Woodcock breeding in the New Forest.—Some days ago I received a nest of four fine woodcock's eggs, which had been taken this year in the New Forest; in what part of the Forest I was unfortunately not able to ascertain.—*A. von Hügel; Stonyhurst, July 23, 1872.*

Tufted Ducks near Garstang in July: Redbreasted Goose.—Twice last week I saw four tufted ducks on the flooded Sowerby meadows. I watched them for some time through a telescope, and could distinguish the crest very plainly on one of them, but on the other three it was invisible, owing to the distance I was off, though from the plumage I think there is no doubt they are of the same species. Is it not unusual to see them at this time of the year? It appears from the works of the best ornithologists that they very rarely breed in England. Some fifteen or twenty years ago, a keeper in the neighbourhood tells me, two specimens of the redbreasted, or, as he called them, "Siberian goose," were killed on the same meadows: he described the plumage to me, and from his description they were undoubtedly *Anser ruficollis*. — *Hugh P. Hornby; St. Michaels-on-Wyre, Garstang.*

Blackfish on the Coast of Cornwall.—The following I copied from the 'Western Morning News' for July 25th. — "A beautiful specimen of that rare visitor to the British Islands, the Pompilus (*Centrolophus Pompilus*, Cuvier; 'blackfish,' Johnson), has been taken in a mackerel-net off the Deadman. The Pompilus is said to act the part of the 'pilot-fish' to other large fish, and has been known to accompany ships at sea through a great extent of ocean. An individual of the species (according to Couch) once followed a ship into the harbour of St. Ives, and was captured. The greatest size they have been known to attain is thirty-two inches long, weight fifteen pounds. The specimen recently caught was twelve inches and a half long by three inches and a half deep. It appeared to have followed a large porbeagle shark, which was captured in the same net at a few feet distance. They are natives of the Mediterranean, and abound near Nice in spring and autumn. The present specimen has been procured by Mr. Matthias Dunn, of Mevagissey, and preserved in spirits as an ichthyological curiosity." — *J. Gatcombe; Lower Durnford Street, Stonehouse, Devon, August 2, 1872.*

Vanessa Antiopa.—An unusual number of this beautiful butterfly have been taken during the present August, especially in the South of England. — *Edward Newman.*

Birds in Aviaries. By BOUGHTON KYNGDON, Esq.*

HAVING for many years kept and bred different species of Australian parakeets and other birds, it is with no little interest that I have read Mr. Newman's first part of "Memoirs of my Bird Cage," and with much pleasure I accept his invitation to give a few rough records of my experiences, failures, and successes. I have learnt to distrust a great deal that I read in books of Natural History, and "Answers to Correspondents" in periodical publications: only the other day I saw in a well-known journal, in answer to an enquiry as to the preparation of a nest for a pair of budgerigars, "Give them some dry grass, moss, and wool!" The authority, no doubt, kept canaries, and thought he could not be far wrong if he advised the little parakeets to be treated in the same way.

As a rule, Australian birds will be found much hardier than they are generally supposed to be: they will live and flourish all the year round in an out-door aviary, provided they are sheltered from rain and cold winds. I have had several aviaries, large and small. If I can, I take advantage of a verandah, and enclose the front with galvanised wire netting, three-quarter inch mesh:—at one end I put up a small room or closet the width of the aviary, eight feet high and three or four feet wide; there is a pigeon-hole about half-way up for exit and entrance in the winter; the door has a large pane of glass, and is kept open during the summer; it is fitted up with perches, and is only frequented by the birds in cold windy winter weather; at the upper part of the back and end walls of the aviary I fix up two or three cocoa-nut husks, as depicted so well in the 'Zoologist' (S. S. 3160), and a few small boxes, four or five inches deep, five to seven inches wide, and one to one and a half foot long, with covers which can be opened, and a small hole towards the top of the centre or one end for the passage of the birds: these I half-fill with saw-dust,—the birds prefer laying on

* I am extremely gratified to find by this and the following communication that the subject of birds breeding in confinement, or in a state of semi-domestication, is likely to receive publicity. There is no doubt that wild birds of many species have been reared successfully for many years, but the mode of treatment and the results obtained have rarely been made known. This seems to be a most interesting branch of Zoology.—E. N.

the bare board, but then they are apt to crack their eggs; this catastrophe is effectually prevented by the saw-dust. If the bottom of the aviary can be turfed and planted with a Chinese privet, or an Arbor Vitæ, so much the better; the birds enjoy the grass and turf, but most of the parrakeets, except the cockateels, will soon destroy the beauty of the shrubs. It is a good plan to have a portion of the top or roof merely of wire-work, as many birds thoroughly luxuriate in a summer shower, lying on their sides and expanding their wings to receive the welcome rain. Their drinking-vessels should be large and shallow, to enable them to bathe with ease. Canary-seed is the staple article of food; a *little* hemp may be given as a great treat occasionally: most birds are remarkably fond of it, but my cockateels and budgerigars will not touch it. A little Indian corn, or a handful of oats or wheat at times will make an acceptable change in the diet. I daily give them green food, in the form of groundsel, grass in seed, and chickweed; but newly-imported birds, fresh from the dealer's hands, must be cautiously dealt with in the matter of green food, as they will generally eat it voraciously, and this is followed by looseness, which almost always ends in consumption: I have lost many rare and valuable birds by want of caution in this respect. After they have gradually become accustomed to it, I believe that a free use of green food is most conducive to their health.

In such aviaries I have kept in perfect health and beautiful plumage:—king parrots (*Aprosmictus scapulatus*), red-winged parrots (*A. erythropterus*), rosellas (*Platycercus eximius*), cockateels (*Calopsitta Novæ-Hollandiæ*), blood-rumped parrakeets (*Psephotus hæmatonotus*), many-coloured parrakeets (*P. multicolor*), turquoisine parrakeets (*Euphema pulchella*), elegant parrakeets (*E. elegans*), budgerigars (*Melopsittacus undulatus*), Australian and Californian quails, crested pigeons (*Ocyphaps lophotes*), and various species of the beautiful varieties of Australian finches and doves.

Budgerigar (*Melopsittacus undulatus*).—Mr. Newman has given such a graphic account of the breeding of the budgerigar, that I can add but little to it. I see we differ in the spelling of the name;* but as it is the one used by the Australian natives, and

* *Betcherrygah* is Mr. Gould's spelling; but I find it difficult to cite any other reliable authority. See Gould's 'Handbook of the Birds of Australia,' vol. ii. p. 81.
—E. N.

the Australian is an unwritten language, it can only be written phonetically: "betcherry" or "budgeri," meaning "good;" and "gah" or "gar," "little;" so they are "good-littles" or "little-goods," a not inappropriate term for these gems of aviary-birds. As regards the incubation of parrakeets,—the Australian species, at least,—I have observed a curious fact I have never seen noted: there are certain genera, of which the cocks, not merely during the breeding season, but at all times, feed the hens, in the same manner as a pigeon does its young; whilst there are others in which this practice does not occur: amongst the former are budgerigars, turquoisines, red- or blood-rumps, the elegans, Paradise parrakeets, &c.; amongst the latter are king parrots, crimson- or red-wings, rosellas, cockateels, &c. Now the curious circumstance to which I refer is this: that among those in which the hen is fed by the cock, the hen only undertakes the duties of incubation, the cock frequently flying up to the entrance to the nest, and tenderly and lovingly feeding her. In the other class, the cocks and hens mutually share the incubating labours or pleasures between them: in these cases the hen sits all night; the cock takes her place during the forenoon, giving it up to the hen in the middle of the day for a short time, and resuming it in the afternoon till evening, when the hen takes up her position in the nest for the night. Where the hen is the sole incubator, she quits the nest for only a few seconds daily, and generally in the evening. In both cases I believe that each bird feeds the young. I have been very unfortunate in the rearing of budgerigars: just as they are able to fly and leave the nest, they have been most viciously killed,—in one case by the cock, in another by the hen. The last brood I had, just as they were leaving the nest the cock was most assiduous in his parental duties, feeding them most attentively; but whenever he flew up to the cocoa-nut nest, up dashed the hen after him, screaming like a perfect virago, and seizing him by the head, neck, or wing, both would come tumbling to the ground together; in short, watch as he would to slip into the nest, she was too wary for him; and I was obliged to catch her and shut her up in a cage, when the cock most energetically continued his duties, and fed the young till they were able to take care of themselves; but somehow or other they were unable to fly, and had curiously distorted legs: and after remaining, some for weeks, others for months, at the bottom of the aviary, they

eventually died. This savage behaviour might have been owing to my having then but one nesting-place in their aviary; a second cocoa-nut husk might have prevented the mischief. In a former instance the cock was the aggressor; in this case, too, there was but one nest. Many persons are unable to see any difference between the cock and the hen: as regards plumage they are similar; but the cere, in which the nostrils are placed at the base of the bill, is blue and smooth in the former; while it is rough and dirty-white in the latter; and this distinction is evident at an early age.

Cockateels.—The cockateels (*Calopsitta Novæ-Hollandiæ*) are great favourites with me; indeed, I think I may say that I prefer them to the little budgerigars, who, with all their beauty, are often very quarrelsome and very noisy. The cockateels, on the other hand, are as gentle in manner as they are soft and elegant in appearance; very tame and affectionate, and very hardy. At the commencement of laying, a young hen may sometimes die; but otherwise nothing seems to affect them. Mine have lived and bred for years in an out-door aviary. They usually commence breeding in April or May, and continue to the autumn: the hen lays four or five eggs, at intervals of one or two days, sitting steadily from the date of the first. As mentioned above, she sits by night, but is relieved at intervals in the day by the cock. About the twentieth day the first young one is hatched,—and an uglier little object can scarcely be imagined: during hatching the cock and hen remain in the nest together for a few days, one of them, I fancy, keeping the eggs, and the other the little chicks, which in about a month leave the nest, and are at first very wild, but soon cease to dash themselves about: even at this early period the young cocks can generally be distinguished by their yellower heads and darker tails, but this often is difficult till they moult. Cockateels live almost solely on canary-seed; as a rule they do not care for green food, but like oats occasionally, and a bit of bread. Their note is a sweet whistle, that of the cock often resembling, "Joey, Joey; sweet pretty Joey." Should his wife happen to die, or to be removed from him, his note is most mournful and melancholy; and, if heard, the hen will certainly be found dead in her nest, if not seen elsewhere.

Turquoisines.—The turquoisine (*Euphema pulchella*) is a very handsome little species, especially the cock, with his turquoise-

blue head and shoulder, crimson dash on the wing, and bright orange breast. They are almost mute, and very shy and retiring, continuing the greater part of the day in some quiet place,—under the roof, or behind a nest-box; in the evening they are more active, and continue so till nearly dark. They delight in running about the grass-turf of the aviary, feeding on the seed-stems; canary-seed is their regular food, and they are very fond of hemp-seed,—but care must be taken in giving them this, as they are apt to become very fat, and then on the least fright will often drop down dead. They breed very freely two or three times a-year, bringing out four or five young at a time. The hen alone performs the duties of incubation, and the cock is very attentive in feeding her during the time, and the young, also, when they are hatched; the hen very rarely leaves the nest, and then only for a very short time in the evening. A nest of young birds, if disturbed, will make almost as much noise as a rookery; and this is almost the only time in their lives when they utter a sound, as their usual note is almost inaudible. The young cocks can be distinguished when they are a few days old, by the crimson feathers appearing on their wings; the hens are devoid of these.

With proper accommodation I believe that most of the Australian parrots would breed with us. Besides the above I have had eggs from rosellas, red-rumps, &c.; but, from some accident or other, failed to hatch them. Once I put a rosella's egg under a turquoisine, and she brought out a young one; but I suppose its excessive ugliness frightened her, for she at once forsook it.

Australian Crested Doves.—The Australian crested doves (*Ocyphaps lophotes*) are most elegant inhabitants of an aviary, easily kept, readily bred, and very hardy. They will make their nest on any little shrub, and steadily sit and bring up their young, paying no heed to passers-by and lookers-on. A curious fact connected with the young is, that they are fully fledged and leave the nest when they are not above one-third the size of the old ones; but they speedily grow, and are soon indistinguishable from them: I can discover no difference between cocks and hens.

The various Australian finches, as diamond sparrows, fire finches, coral-beaks, cherry-cheeks, and a host of others, are pretty aviary birds, but, as a rule, are very short-lived. On being turned into the aviary, no matter what time of the year, their first employment seems to be to build a nest, and this they will do in a

bush, a box, a basket—in fact anywhere: if they do not require it for laying purposes, they use it as a sleeping apartment; they all make a large nest, composed of grass-stems, fine roots, tow, and cotton-wool, having a long passage leading into the nest proper. Unfortunately, the newly-imported birds lay and hatch in November and December; and during the long nights, from 4 P.M. to 8 A.M., the young are starved, being unable to go so long without food. Among all these finches a most peculiar method of love-making prevails. The cock will take a long, stiff grass-stem by its extreme end in his bill, and, holding up his head erect in the air, thus he takes his place by the side of the hen, where, in this curious position he makes sundry grotesque springs and jumps, singing all the while, the notes varying according to the species. I have observed this habit only among Australian finches, and with these, whatever the genus or species, it is the universal custom.

A pair of Virginian nightingales should be in every good-sized aviary: they are very showy, always in active motion, and both cock and hen sing the greater part of the year, early and late, and all day long. The hen of a pair I lately kept laid in a suspended seed-pan, without making a nest; had she been supplied with materials, or furnished with a blackbird's nest, no doubt she would have sat and hatched out her young.

I must now bring these jottings to a close by merely remarking that few birds in a large aviary are more interesting than a pair of Californian quails: they are very tame and hardy; in May they will scratch a small hollow in the earth, where the hen will daily lay an egg for a month or six weeks! *Small* bantams readily bring out the young, which are easily reared on groats, canary-seed, chopped egg and bread, and especially ants' eggs, but these are not indispensable. One year, the hen after laying seventeen eggs sat on them herself, and brought out fifteen young; and there could not be a prettier sight than these beautifully-marked, tiny puff-balls running about with the old cock and hen.

BOUGHTON KYNGDON.

Croydon, August 8, 1872.

Notes on the Breeding in Confinement of the Pochard, Pinkfooted Goose, and Wigeon. By CECIL SMITH, Esq.

THESE three species having bred in my pond this year, I think a few short notes on the subject may not be uninteresting to some of the readers of the 'Zoologist.'

The pochards were the first to produce their brood, which they did on the 12th of May: as I did not find the nest until the old bird had been sitting some time, I am not able to tell the exact time of incubation. The nest was placed on the side of a steep bank, close to the water: it was a mere hollow in the bank, the eggs being only kept from rolling down into the water by the projecting roots of some laurels, under which it was placed; it was lined with a few dry bents and leaves, and a little down from the body of the bird,—but of this there was very little, not nearly so much as is usually found in a wild duck's nest,—nor did the old bird take so much trouble to hide her eggs with grass and leaves as a wild duck usually does when she leaves it. The old bird came off her nest about three times a week to feed and wash herself: at these times she was very ravenous, bolting meat or barley-meal by the handful. Immediately she was satisfied, and had had a good wash, she returned to her nest as hard as she could swim. The young ones looked very much like young wild ducks in colour, size, and markings, except about the feet and legs, which were decidedly pochard, especially the hind toe, which had the large membrane of the diving duck very fully developed. The brood consisted of four, and one which was left dead in the nest, which I have preserved. I am sorry to say none of the brood survived more than a few days: as the weather was very wet the pond got flooded, and the young pochards were swept over one of the waterfalls and lost.

The pinkfooted geese were more successful: the first egg was laid on the 2nd of May, and the bird began to sit on the 8th, having laid six eggs, three of which eventually proved to be addled; the other three were hatched on the 5th of June. The eggs were placed close by the side of a pond, at first without any nest; but as the number of eggs increased, the old birds collected some long bents of grass and a few leaves, which, with a little down from the body of the female, completed the nest. During the whole time of incubation the gander remained close to the nest,

and was most assiduous in his attentions, giving his mate immediate warning of the approach of anything like danger, flying and hissing at one in a most formidable way, by which means he established a most wholesome terror in all my children, who would otherwise, in all probability, have broken the eggs, in their eagerness to see when the young were going to be hatched. The young birds were rather odd-looking little things, their heads looking too large for their necks: the top of the head and the back were very dark, almost black; the neck and the rest of the upper parts pale olive-green, the under parts lighter; the legs and bill were very dark olive-green, almost black. By the 27th of June the young geese were much grown, but little change had taken place in their general appearance, except, perhaps, that the legs were scarcely so dark as at first. By the 8th of July the first feathers began to appear on the back, and by the 11th the quills were beginning to shoot; by this time, also, the legs first began to assume a pink tinge through the olive-green; the pink also began to make its appearance on the bill. Now, August the 7th, the young birds very nearly resemble their parents, both in size and colouring: the old birds, are, however, still very assiduous in their attention to their young ones, who, however, hardly seem to need their assistance, being perfectly able to take care of themselves. Their food from the very first has consisted of grass,—and nothing but grass,—the young very soon learning to crop the grass like their parents.

A brood of eight young wigeon made their appearance on the 27th of June. Unluckily I did not find the nest, so can say nothing about the time of incubation. The young birds, when they first made their appearance, were very like young wild ducks, but the light parts were a little more inclined to red. They fed entirely on grass, pond-weed, and any insects they could catch,—for these they searched the banks by the side of the pond most eagerly. The original brood of eight are now reduced to two: these two survivors are now nearly full-feathered, but whether they are ducks or drakes it would be difficult to say; but I am rather inclined to think they are both drakes, as their plumage rather resembles the drakes, in their present peculiar state of summer plumage.

Both the pochards and the wigeon were quite unlike the pink-footed geese, as to the attention paid by the male to the female

during the time they were sitting, for in neither case did the male birds pay any attention to the females, either while sitting or afterwards when bringing up their broods.

CECIL SMITH.

Bishop's Lydeard, near Taunton.

The Birds of the Færoe Islands. By Capt. HENRY W. FEILDEN.

GRALLATORES.

56. *Charadrius pluvialis*, Linn. Golden Plover. *Native name*, Legv.—Arrives in March and leaves in the middle of August, though in mild seasons some remain the winter through. It is very abundant as a breeding species, and is dispersed throughout all the islands. Herr Müller has taken its nest with a full complement of eggs on the 3rd of May, 1868; on the 10th of May he took the eggs apparently sat on for eight days. I took five nests on the 16th of May, in the vicinity of Noredhal, Stromoe, where this bird is especially abundant; three of the nests had four eggs, the others three: the season was remarkably backward; the hills at this date were covered and the valleys patched with snow, whilst blinding showers of sleet and hail were frequent. The inclement weather kept the golden plovers on their nests till we nearly stepped on them; as a rule I have found the nests difficult to discover. Mixed with the green moss which formed the greater part of the lining to the nest, I noticed many sprays of gray lichen, which gave a marbled appearance to the nest and matched most harmoniously with the colouring of the eggs.

Obs.—No writer has hitherto noticed the gray plover (*Squatarola helvetica*) in the Færoe Islands: it must surely have been overlooked, or taken for the golden plover in winter plumage.

57. *Ægialites hiaticula*, Linn. Ringed Plover. *Native name*, Svartholsa.—Is not so numerous in Færoe as I have noticed it to be in some parts of Britain during the breeding season, more especially in the Outer Hebrides. It nests on barren stone-covered spots on the hill-sides, much further from the shore and at higher elevations than I have usually obtained it in this country: this may be accounted for by the precipitous nature of the sea-coast and the absence of shingle beaches, where this bird delights to scrape its

nest. Müller notices that it flocks in winter with *T. maritima*: in spring I remarked it often flying with *T. alpina*.

58. *Ægialites fluvialis*, Bechst. Little Ringed Plover.—I record this bird on the authority of Herr Müller (Færoernes Fuglefauna, p. 21). I have a suspicion that the smaller variety of *Ægialites hiaticula*, which has been a cause of perplexity to many of our ornithologists, may have been confounded with this bird.

59. *Calidris arenaria*, Linn. Sanderling.—Wolley mentions having seen one pair in Færoe towards the end of June, 1849. Müller includes it in his list. I did not see it.

60. *Vanellus cristatus*, Mey. Lapwing. *Native name*, Vujpa.—Appears now and again in spring and winter: Müller observed five on the 5th of March, 1847, in a flock; in the winter of 1857 he saw several, and on the 20th of November, 1867, he had one brought to him at Thorshavn.

61. *Streptilas interpres*, Linn. Turnstone. *Native name*, Tjaldurs-grealingur.—Landt makes no mention of this bird. Wolley noticed it in a small flock, but could get no indications of its breeding. Müller thinks that it breeds in Færoe; I have little doubt that it does. We saw it frequently both in flocks and single pairs throughout the islands. At Hoivig Holm, near Thorshavn, I noticed a pair on the 21st of June. On the shores of the island of Videroe they were especially numerous; near to the landing-place of the village of Videroe, I counted on the 9th of June fully a hundred feeding on the rocks at ebb-tide, in company with *T. maritima*; though collecting in flocks of ten or a dozen when scared, they were evidently all paired. On other portions of the shores of the North Isles, I noticed single pairs, which I thought must be nesting, but a careful search on my part failed to discover the nests. The fishermen, who are well acquainted with the bird, assured me that it remained the summer through.

62. *Hæmatopus ostralegus*, Linn. Oystercatcher. *Native name*, Tjaldur.—This handsome watchful bird is ubiquitous in Færoe, and is a cause of much annoyance to the naturalist, for should he wish to steal unperceived on any other bird, the noisy querulous oystercatcher is sure to detect him and proclaim his presence. It is found breeding all over the islands, from the sea-line almost to the summit of the higher hills, and whenever you approach the nest it circles round just out of gun-shot, uttering its harsh cry. I have seen it chase the common skua (*Lestris catarractes*), striking

at the intruder with its sharp bill, and driving it away to the breeding-grounds of the next pair of oystercatchers, who took up the pursuit and then passed it on, so that the skua was glad to make its escape seaward. We found a nest with young just emerging from the shell on the 7th of June; the young at that stage show no indications of a long bill. Of the many nests that I have examined I never noticed one with more than three eggs in it, though some authors give four; I believe this to be an error, and that the oystercatcher never lays more than three eggs. The peasants in Færoe like this bird, because they think it does good to the pastures by destroying the slugs and worms; at evening time I have seen as many as forty of these birds collected in a flock, feeding on the meadows.

63. *Grus cinerea*, Bechst. Crane. *Native name*. Treani.—Müller records one capture of the crane from the North Isles in 1857. When visiting the island of Svinoe in June, I was shown a crane that had been shot by one Hans Hansen, on the 9th of May, 1872: it was feeding at the time in a meadow close to the village. I was much amused when early in the morning, as I lay in bed, a man walked into the room, with something in his arms bound up in a black shawl; he was followed by some dozen persons—men, women and children—who ranged themselves in solemn silence round the room; then Hans Hansen, who was a comical-looking blade, placed the object on its feet and began to unswaddle it: forthwith came out the stuffed crane, with a stout cord tied round its middle, by which it had been suspended from the cottage ceiling. Hansen told me that the crane was not a very uncommon visitor in the spring, and that he had seen it in Svinoe several times before.

64. *Ardea cinerea*, Linn. Heron. *Native name*, Hegri.—Is only an occasional visitor, and is not known to breed in the Færoe Islands. We saw one flying high overhead when crossing Skuoe fiord on the 24th of May. An old male was shot near Saxen on the 3rd of June, 1864. Wolley mentions having seen a single example in June, 1849, and Müller records them as not uncommon stragglers.

65. *Botaurus minutus*, Linn. Little Bittern.—Herr Müller informs me that in 1834 His Excellency F. F. v. Tillerich, Governor of Færoe, received a male of this species from the island of Stromoe, which lived in confinement for several days. This bird was subsequently sent to the museum at Copenhagen.

66. *Nycticorax griseus*, Linn. Night Heron.—Early in July, 1870, an immature male of this species was shot at Nortedhal, island of Stromoe, and received by Herr Müller.

67. *Ibis falcinellus*, Linn. Glossy Ibis. *Native name*, Svartur Spegvi.—Is recorded by Herr Müller (Færoernes Fuglefauna, p. 23).

68. *Numenius arquata*, Linn. Curlew. *Native name*, Tangspegvi.—The curlew is only known in Færoe as an autumnal and winter visitant. Yarrell (Hist. Brit. Birds, 3rd. ed., p. 513) mentions that this bird visits the Færoe Islands in summer: I think this is a mistake. It is singular that it is entirely absent as a breeding species, giving place to the whimbrel, which it only partially does in the Shetland Islands.

69. *Numenius phaeopus*, Linn. Whimbrel. *Native name*, Spegvi.—Svabo mentions that they arrive about the middle of April and depart by the 29th of September. Herr Müller has seen some as late as the 3rd of October. On the 16th of May I noticed them, though paired, in flocks near to Thorshavn, feeding on the meadows; soon afterwards they separated and betook themselves to their breeding-grounds. They are so abundant as a breeding species that we never seemed to be able to get out of their sight; they were constantly flying round us in company with the oystercatchers. The first nest of the whimbrel that we procured was on the 25th of May, in the island of Suderoe; afterwards we found and received them in considerable numbers. On the 17th of June I got twelve nests, each with four eggs, which had been collected for me the week previously from the vicinity of Nortedhal, Stromoe; all were quite fresh. On the 16th of June I found a nest with four eggs in rather a singular position: it was placed close to a rill, between two blocks of stone, which just gave room enough for the bird to squeeze between. The whimbrel is of a pugnacious disposition whilst breeding, and is constantly on the alert to drive off intruders from the vicinity of its nest; I have watched them by the hour chasing the lesser blackbacked gull (*L. fuscus*). When engaged in these combats their flight is rapid and arrow-like, whilst they constantly repeat their trilling cry, which has not inaptly been described as resembling the words "tetty, tetty, tetty, tet," quickly repeated. A beautiful white variety is in Herr Müller's collection.

70. *Totanus calidris*, Linn. Redshank. *Native name*, Stelkur.

—Svabo names it *Scolopax totanus*, and says that it is seen to the middle of April, but disappears in summer. Wolley mentions having seen a good-sized flock of these birds in the end of June, 1849. On the 15th of May, 1867, Herr Müller shot one of a pair near Thorshavn, and on the 24th of April, 1868, another was sent to him from Kollefjord. I saw one feeding on the strand near Sorvaag, island of Vaagoe, on the 14th of June. In all probability a few pairs breed yearly in Færoe.

71. *Totanus glareola*, Linn. Wood Sandpiper.—Introduced on the authority of Herr Müller (Færoernes Fuglefauna, p. 24).

72. *Limosa ægocephala*, Linn. Blacktailed Godwit.—I saw a female of this species in Thorshavn, which had been killed in the end of May, 1872, at the head of Sorvaag Vatn, island of Vaagoe; when shot it was accompanied by another, probably the male bird, and doubtless they were breeding. Herr Müller informs me that he has received the eggs of this bird on one occasion, taken in Færoe.

73. *Scolopax rusticola*, Linn. Woodcock.—Has only once been procured in Færoe, from the island of Naalsole on the 15th November, 1852 (Færoernes Fuglefauna, p. 26). This shows that the Færoe Islands are beyond the western limit of the migratory line of flight of the woodcock.

74. *Gallinago media*, Leach. Common Snipe. *Native name*, Mujresnujpa.—Is exceedingly abundant as a breeding species throughout the Færoe Islands, and many remain the winter. Wolley remarks: "The common snipe (*Scolopax gallinago*) is remarkably tame, and may be seen feeding near houses and within a few yards of men." As it is never shot at, it is exceedingly tame. Standing at a cottage door of an evening I have counted six or seven overhead at the same time; then several would alight on a neighbouring dunghill and commence boring for food, quite regardless of the presence of man. On the island of Great Dimon, where there is very little water, and which is not by any means an inviting-looking spot for snipe, I noticed several pairs walking on the short turf at mid-day searching for food: when disturbed they arose, circled overhead drumming; soon they alighted with expanded quivering wings, and after a few seconds commenced searching again for food. I have seen a snipe taken on her eggs by a boy, who seized her with his hands. The snipe, when disturbed off its eggs, invariably flies away without uttering any

cry. I understand that they do not emigrate from Færoe during winter in any appreciable numbers, but in hard frosts collect in immense wisps along the line of sea-coast. It is singular that the jack snipe (*Scolopax gallinula*) should never have been noticed in the Færoe Islands.

75. *Tringa canutus*, Linn. Knot. *Native name*, Grealingur. —Is a spring and autumn visitant. We did not meet with it during our tour through the islands.

76. *Tringa alpina*, Linn. Dunlin. *Native name*, Graagrealingur.—The dunlin is a common enough bird in spring throughout the Færoe Islands, but not nearly so numerous a breeding species as I have observed it to be in the Outer Hebrides. Though we searched diligently on several occasions, in places where these birds were evidently breeding, we did not succeed in finding a nest with eggs in it. Wolley records it in his list of birds found breeding in the islands.

77. *Tringa maritima*, Brünn. Purple Sandpiper. *Native name*, Fjadhmurra. — Pairs of these interesting birds are to be found breeding throughout the islands, but they appear to be most abundant on Sandoe, from whence I received most of the eggs I procured. I only found one nest myself, and that was on the 20th of May, when walking over the fells between Thorshavn and Nortedhal. I almost placed my foot on the hen bird, which then fluttered off the nest, pretending to be broken-legged and winged; indeed the poor thing employed every artifice to draw our attention from her eggs: she succeeded in deceiving our guide, who ran after her and tried to catch her: I stopped the chase, which would otherwise have proved a long one, by shooting the bird. Returning to the nest I found four eggs lying in a little hollow scooped out of the scanty moss which clothed this alpine region; a few dried sprigs of moss composed the lining of the nest. The fells on this date were deep with snow in the sheltered spots, and the tops of the hills were white. The purple sandpiper was frequently seen by us along the shore, sometimes singly, often in company with others of its species, as well as with dunlins and turnstones, feeding at low tide on the small shells and animalculæ left on the sea-weed. It is remarkably tame, and will allow a person to approach it within a few feet. Wolley remarks, "We found it breeding on the summits of the mountains in small numbers: young just fledged at the end of June."

78. *Phalaropus hyperboreus*, Linn. Rednecked Phalarope. *Native name*, Helsareji.—Svabo names this bird *Tringa lobata*, and mentions that it lays four eggs. Landt also calls it *Tringa lobata*, and thus writes about it: "In Færoese 'Helsareji' is the same as that called by the Icelanders 'Odinshane.' This pretty bird, which is web-footed, is not seen in common. It builds its nest near inland pieces of water, but in spring it frequents the sea-coast, and for the most part is found on floating heaps of sea-ware; in this case it is considered by the fishermen as an indication of bad weather." Wolley writes, "The rednecked phalarope (*P. hyperboreus*) we only found in one remarkably swampy little valley, where also bred dunlins and golden plover." Herr Müller records it as a regular spring visitant, breeding in the islands. In July, 1869, he received a nest with four eggs from Kaalbak, Stromoe, nearly ready to hatch. The rednecked phalarope appeared to be extremely abundant in Færoe this spring, though I was not fortunate enough to find it nesting, or indeed to see it anywhere but on the sea. We came across a pair at sea between the Great Dimon and the island of Skuoe, on the 1st June: a heavy sea was running at the time, but these little birds rode on the top of the waves with apparent ease and comfort; we in the boat were drenched to the skin. I received a pair, shot on the sea near Thorshavn, on the 2nd June. I saw other three that were killed on the sea near Thorshavn by a Swedish nobleman during the middle of June, and on the 18th June I saw another pair that had been killed at sea, off the island of Osteroe. The stomachs of those I examined were full of a yellow substance, probably the remains of minute shrimps or marine insects. It is evident that a considerable number of this species visit the Færoe Islands for the purpose of reproduction, for all the specimens I saw had been killed in a very limited area, and no doubt they are equally distributed throughout the islands. No writer with whom I am acquainted has given a complete life-history of this most charming and interesting bird. We are aware that it appears in the Outer Hebrides (formerly in the Orkneys and Sutherlandshire), in the Færoes, Iceland, and many other northern regions, as if by magic, about the end of May; it incubates, rears its young and is away from its breeding-places by August: many are shot on the coasts of Britain and Europe during the autumnal migration, but I am unaware where the great body of them take up their winter quarters.

79. *Ortygometra crex*, Bechst. Corn Crake. *Native name*, Eakurskrivt.—Landt records this bird, but mentions that he had never seen it himself, and that it was not a regular visitor to the islands in his day. It is not, however, uncommon as a spring and summer visitor: amongst other instances Herr Müller informs me that he received it from Hoidenor on the 5th October, and another was taken alive near Thorshavn on the 17th September, 1871. He has in his collection the eggs of this bird taken in the island of Sandoe.

80. *Rallus aquaticus*, Linn. Water Rail. *Native name*, Jearakona.—Svabo mentions that this bird has appeared in flocks in the Færoe Islands, and that he was fortunate enough to see a flock on Sandoe about the middle of September, 1781. Müller records it as an autumnal visitant.

81. *Gallinula chloropus*, Linn. Moorhen.—Appears to be an uncertain wanderer to Færoe. Müller records it as having occurred in the months of December, 1845, and February, 1854, and again in June, 1860.

82. *Fulica atra*, Linn. Coot. *Native name*, Sjouhona.—Is tolerably well-known as an autumnal and winter visitant. Lanst, writing about this species says: "Is seen very seldom. It is, however, easily known by its naked and white forehead, as well as its feet, which, instead of webs, have broad lobes at the sides of the toes."

NATATORES.

83. *Anser ferus*, Gmelin. Graylag Goose. *Native name*, Graagas.—Landt writes, "These fowls were very abundant here formerly, but in consequence of the number killed by the natives they have become scarce." Svabo mentions that they were numerous in his day, and were caught with the 'fuglestang' on Sorvaag lake, and divided amongst the landowners. Wolley writes, "Wild geese, formerly bred in Færoe, if not now." Müller, writing in 1862, says that they formerly bred in Sorvaag lake, but are now only seen in spring and autumn, and have not been known to nest in Færoe for thirty years.

84. *Anser albifrons*, Gmelin. Whitefronted Goose.—This bird is recorded by Herr Müller, and he informed me that one was seen on the island of Mygoenæs in April, 1867, amongst other wild geese which arrive yearly in that island, remain there a short time, but leave with southerly winds.

85. *Bernicla canadensis*, Linn. Canada Goose.—A fine adult example of this bird was killed near Kirkeboe, island of Stromoe, on the 4th November, 1866: it measured thirty-seven inches in length.

86. *Bernicla leucopsis*, Bechst. Bernicle Goose. *Native name*, Brangaas.—Early in June, 1864, a male was shot at and lamed on Great Dimon: Herr Müller secured it and sent it to the Zoological Gardens in Copenhagen; it lived well on corn. On the 20th November, 1867, a male was shot at Kirkeboe, flying with tame geese; and again on the 30th January, 1868, a female was shot at Kirkeboe.

87. *Bernicla brenta*, Steph. Brent Goose. *Native name*, Helsingagaas.—Is a spring and autumn visitor to the Færoe Islands. I received the skin of a fine adult specimen of this species, killed at Qualvig, island of Stromoe, during May, 1872: it does not, however, breed in the islands:

88. *Cygnus musicus*, Bechst. Hooper. *Native name*, Sveanur.—Landt writes, "Swans are seen in these islands in flocks early in the spring and late in the autumn. They remain some time in the bays and fresh-water ponds, where some of them are shot every year." Wolley writes, "Wild swans bred by tradition in two places in Færoe, each called Oknadal, from this circumstance." In the spring they are now seen on their migratory flight to Iceland, passing over the Færoe Islands, where they sometimes alight for a few days; in the autumn they return in smaller parties, on their way to more temperate regions.

89. *Anas acuta*, Linn. Pintail. *Native name*, Andt.—Landt writes, "It is very scarce in Færoe, and is perhaps nothing but a bird of passage, which sometimes rests itself in these islands." Müller, writing in 1862, says that it is sometimes seen during summer, and suggests that it breeds in some instances: in this supposition he was correct, for in June, 1871, a nest of this bird with nine eggs was taken on Toftvatn, a lake in the island of Osteroe: the nest and eggs are now in that gentleman's collection. I saw these birds on several occasions, and as late as the 21st May, I noticed six pairs of them on Halsavatn, island of Sandoe: they were evidently mated, but I must add that when I revisited this lake in June they were no longer there.

Anas boschas, Linn. Wild Duck. *Native name*, Vidldunna.—The wild duck is common as a breeding species throughout the

Færoe Islands. Every considerable piece of fresh water is tenanted by a pair or more. I found a brood of five on Toftvatn, 4th June, 1872, that had not been hatched more than a couple of days.

91. *Querquedula circia*, Linn. Garganey.—Herr Müller has an adult male of this species in his collection, killed lately in Færoe. Landt mentions it under the head of "*Anas circia*. The summer teal. A small delicate duck, one of which I had in my possession. It was the only one I ever saw in these islands, and was shot on Leynumvatn, in Stromoe."

92. *Querquedula crecca*, Linn. Teal. *Native name*, Andt.—According to Landt it is seen chiefly in spring, in small flocks, which search for their food on some parts of the sea-coast, as at Kirkeboe and Hunsastoe, in Midvaag. Wolley makes no mention of it in his account of the 'Birds of the Færoe Islands.' Müller records it, and on the 5th May, 1863, an old male was shot out of a flock of seven near Hoivig. I did not meet with it in my tour through the islands, so I fancy it must be sparingly distributed as a breeding species.

93. *Mareca penelope*, Linn. Wigeon. *Native name*, Andt.—Müller mentions that he has seen several examples of this bird, and had sent three to the museum in Copenhagen. I think that this bird not unfrequently breeds in Færoe, for I saw a male which was killed in Leinumvatn in the end of May, 1872, when in company with a female, and on the 11th of June I saw three pairs on a lake near Eide, Osteroe. We were not fortunate enough to procure a nest.

94. *Somateria mollissima*, Linn. Eider Duck. *Native name*, Eava.—The eider duck is exceedingly abundant throughout all the islands, and is protected by law, the penalty for shooting one being a fine of a rix-dollar; but I am afraid the law is not strictly enforced, for some of the fishermen in the North Isles told me they shot them for food whenever they got a good chance. On Kirkeboeholm, Stromoe, they are preserved by the owner of the islet, for the sake of the down, and about two hundred pairs nest there yearly. The production of down as an article of commerce is but little attended to in Færoe. Müller mentions having found this bird nesting on the top of the island of Hestoe, at an altitude of a thousand to twelve hundred feet. I may add that I have taken a nest in the Shetland Islands, placed in the midst of knee-deep heather, at least five hundred feet above the sea-level. In the

town of Thorshavn, where two little streams empty themselves into the harbour, several domesticated eiders were always to be seen consorting with the common ducks. They were very tame and very voracious, for several times I fed them with the flesh of birds I had just skinned, and they devoured the raw meat with evident relish. I noticed several young males in company with adults of the same sex, which were conspicuous from the large crescent-shaped patch of white on their breasts: this was so decided that it could be seen with the naked eye at a distance of two or three hundred yards. I was informed that the young male in this stage of plumage was considered by the Færoese to be three years old, and would assume its adult plumage in the next moult.

95. *Somateria spectabilis*, Linn. King Duck. *Native name*, Eavekongur.—Landt, who describes the bird accurately, writes, "Some solitary ones are found now and then among the eider ducks, to which they have a pretty close resemblance, only that they are less." Wolley includes it in a list of birds said to have been found breeding in the Færoe Islands, but of which he could not find the slightest trace. Yarrell records that a few breed in the Færoe Islands, but this is extremely doubtful. Müller has procured it on several occasions, and, singularly enough, in the summer, but there is no instance known of its having been found breeding.

96. *Ædemia fusca*, Linn. Velvet Scoter. *Native name*, Andt.—Herr Müller has only procured one example of this bird in Færoe.

97. *Ædemia nigra*, Linn. Common Scoter. *Native name*, Andt.—Herr Müller informs me that a single pair of these birds were observed at Hoidenor on the 30th June, 1868; the male was shot.

98. *Ædemia perspicillata*, Linn. Surf Scoter. *Native name*, Andt.—Herr Müller procured one, which was sent by him to the museum in Copenhagen.

99. *Fuligula marila*, Linn. Scaup Duck. *Native name*, Andt.—Is common in autumn and winter, and pairs have been seen remaining in the islands throughout the summer. I saw a single pair on a small lake in Stromoe on the 20th May, 1872.

100. *Harelda glacialis*, Linn. Longtailed Duck. *Native name*, Egvedla.—Appears in autumn in large flocks, keeping in the bays and fiords, and remains till March; some have been seen during

the summer, and Müller thinks they have bred in the islands. Wolley mentions having seen a single male in the end of June, 1849, and I saw a male that was killed on the sea near Thorshavn, in the beginning of June, 1872.

101. *Clangula glaucion*, Linn. Goldeneye. *Native name*, Andt.—This bird has been very seldom seen in the Færoe Islands, according to Müller, who only records one instance of its capture, on the 12th March, 1858.

102. *Mergus serrator*, Linn. Merganser. *Native name*, Topandt.—Müller observes that it is found in the islands both summer and winter, and that it lays ten or twelve eggs. I noticed it sparingly distributed through the islands: on the 12th June we saw two pairs at Saxen, Stromoe; two nests with eggs were brought to me from Kalbak, Stromoe, about the middle of June.

103. *Mergus castor*, Linn. Goosander. *Native name*, Topandt.—Appears to be of very rare occurrence in the Færoe Islands. Müller only records one instance of its capture, which was obtained on the 1st March, 1854.

104. *Podiceps nigricollis*, Sundel. Slavonian Grebe.—This bird has not been observed to breed in Færoe, but it is a common autumnal visitant. I was given the skin of one which had been shot near Eide, Osteroe, in the fall of 1871.

105. *Podiceps minor*, Linn. Little Grebe.—Is included on the authority of Herr Müller, who procured a single example on the 24th November, 1845.

106. *Colymbus glacialis*, Linn. Great Northern Diver. *Native name*, Havgaas.—Is seen most frequently in spring and autumn frequenting the bays and fiords: it has never been known to breed in the islands, though adult individuals are seen along the coasts during summer. I watched through my glasses one of these birds fishing close to the shore of Suderoe, on the 30th May. Herr Müller informs me that an adult male, killed on the 6th June, 1865, weighed ten and a half pounds.

107. *Colymbus arcticus*, Linn. Blackthroated Diver. *Native name*, Loumur.—Müller records a single example as having occurred in Færoe.

108. *Colymbus septentrionalis*, Linn. Redthroated Diver. *Native name*, Loumur.—Arrives in the middle of March and leaves in the end of September. Landt mentions that "Its flesh is well tasted, and is fattest at the time it lays its eggs. At that period

the natives, when they go to the lakes which they frequent, and see them flying, can frighten them so much with a loud shout that they fall down; and if they drop on the grass they may be easily caught with the hands, as they can neither walk nor take wing again." A resident in Eide, Osteroe, gave me the skin of one of these birds, which was procured under the following circumstances. In June, 1871, a girl, cutting peats near a lake, saw a *Loumur* on the grass a few feet from the water: on running up to it the bird made no attempt to slide into the water, but crouched on the grass; she picked it up and carried it home; it was turned loose into a small garden, where it lived for a couple of weeks on fish given to it, but terminated its existence by strangling itself between the garden railings. We found these birds breeding by the shores, or on islands in solitary lakes, in several places. I took the eggs, fresh, from an islet in Halsavatn, Sandoe, on the 2nd June, 1872. In Skuoe, where a pair had prepared a nest on a small tarn on the summit of that island, the eggs had not been deposited by the 7th June. The redthroated diver is yearly becoming scarcer throughout these islands, owing to their destruction during the period of reproduction.

H. W. FEILDEN.

(To be continued.)

PS. *Starling*, No. 37.—The starling of the Færoe Islands has decidedly a longer and stronger bill than individuals from the continent of Europe: if at the same time it showed any marked peculiarity in plumage I would be willing to adopt it as a good species under the name of "*S. faroensis*," which has already been applied to it by continental naturalists; but I will go no further than pointing out that climatic influences induce varieties, notably exemplified in the wren, the mottled raven, and the starling of the Færoe Islands.—H. W. F.

Errata.—In the 'Birds of the Færoe Islands,' Zool. S. S. p. 3215, line 34, *for* Finden *read* Finsen; same page, line 35, *for* Pratincola *read* Pratincola; p. 3219, line 38, *for* rests *read* nests; p. 3224, line 3, *for* Westmainshavn *read* Westmanshavn; same page, line 32, *for* 1868 *read* 1863.—H. W. F.

Golden Oriole in Cambridgeshire.—When in Cambridge a few days ago Mr. Baker showed me a recently-mounted male golden oriole, in very good plumage, which had been shot on the 5th instant in a cherry holt at Meldreth, Cambridgeshire.—*J. G. Tuck*; July 28, 1862.

Ornithological Notes made in Devon and Cornwall during July and August, 1872. By JOHN GATCOMBE, Esq.

Spotted Woodpecker, Nightjar, Swift, Spotted Flycatcher, &c.—July 6th. A great spotted woodpecker was killed near Plymouth, and others seen in the same locality. 9th. Nearly put my foot on a nightjar, lying among some ferns in Bickleigh Vale, and a short time before saw one asleep on some faggots of wood in bright sunshine. These birds have been very plentiful during the present summer in our neighbourhood, and their churring notes might be heard in various localities almost every night. Swifts have been and still are very numerous, but I cannot say the same concerning other members of the swallow tribe. Spotted flycatchers have now brought out their young families, and it is a pretty and interesting sight to watch the young birds in their conspicuously spotted plumage, darting from their perches on trees, rails, posts and telegraph-wires, after flies, in imitation of their parents, who nevertheless constantly supply them with food. The telegraph-wire seems a favourite perch for the flycatchers, especially when it runs by the side of a wood. I have often observed wood larks, too, perched for a length of time on these wires, the long spurs sticking out from the hinder toe producing a rather singular effect. Observed several families of young gray wagtails, also apparently as large as the old ones, but with somewhat shorter tails, running about by the river.

Heron, Crow, Kingfisher, Iceland Gull, &c.—July 11th. Again went down the river Dart from Totnes, and remarked a great many old herons on its banks, with but only one young one among them. Crows were very numerous, and now and then a kingfisher would be seen darting out from under the woods by the river side. Near Torquay I saw some redbacked shrikes, and in the museum of that place a nice young specimen of the Iceland gull, which had been killed in Torbay during last autumn. This specimen was rather prettily marked, and, I thought, showed more brown on its plumage than is usually the case.

Water Ouzel, Peregrine Falcon, Raven, &c.—July 13th. Saw several water ouzels on the river Plym, one of which was moving about and turning over stones and tufts of moss and weeds. The beak of the water ouzel bears a resemblance to that of the turnstone, by being slightly curved upwards. Kingfishers having now

reared their young are already making their appearance in our estuaries and on the sea-coast. A week or two since I saw a pair of fine young peregrine falcons, which had been taken from the nest at St. Alban's Head, and brought to Plymouth to be stuffed. They were almost fully fledged, with a very little down showing here and there on the back and wings. These young falcons were, it appears, taken by a sailor in quite a systematic way, he being lowered by a rope one hundred feet from the top of the cliff, and as he said, taking the precaution to stuff his cap full of wadding, in case of stones falling on his head. One young bird flew out of the nest, falling in the sea two hundred feet below, and was drowned, but afterwards picked up by a boat. The old birds were flying round, making a great noise, whilst the nest was being robbed, but did not attack the man. Ten more young ravens have been brought from the neighbourhood of Dartmoor since I last wrote, and the dealer who bought them tells me that he can get a ready sale for as many as they can bring. 15th. Observed a small company of common sandpipers on the bank of the Laira, which had come from the breeding-places on Dartmoor. 31st. Visited Rhame Head, on the coast near Plymouth, where the herring gulls breed, but, strange to say, saw only three or four young birds on the rocks able to fly: the old ones were still numerous, and made a great noise.

August 1st. Shore birds have begun to make their appearance. Observed many curlews, dunlins, and ringed plovers on the "West Mud" banks, and several young herring gulls in their dark brown plumage flying about the harbour, but I am sorry to add that many parties have commenced shooting these harmless birds.

August 3rd. Wheatears, both young and old, are now numerous on the coast, which is always the case for a few weeks previous to their departure.

August 5th. There were several small flocks or families of the common sandpiper on the banks of the Laira, and some herons which allowed the train to pass within forty yards of them without taking flight.

August 15th. Observed swifts for the last time: these birds have been unusually plentiful with us during the summer.

August 17th. Remarked starlings at a great height in the air, hawking in circles after flies in the manner of swallows. This habit I have occasionally observed before in still, calm weather.

An adult oystercatcher, common tern and young puffin were brought to a birdstuffer this morning. Terns of any kind are seldom seen in our harbours before September, and these mostly young birds of the year, but I can remember two extraordinary flights of adult arctic terns occurring on the coasts of Devon and Cornwall in May many years ago, and strange to say both flights happened after a dense "sea-fog."

August 30th. Robins have returned to our gardens in the town, and commenced their autumnal song; and it is quite curious to observe how many tailless sparrows there are flying about at this season of the year, which of course is owing to the general moult. I have not remarked other small birds to be in a similar predicament, at least to such an extent.

August 31st. Observed a very large flock, consisting of marsh, cole, and longtailed titmice, flitting about some alder trees by the side of the river Plym, and a great congregation of sand martins perched on the telegraph-wires of the railway near at hand: these last I have no doubt were preparing to migrate.

J. GATCOMBE.

8, Lower Durnford Street, Stonehouse, Plymouth,
September 5, 1872.

Woodcock Breeding in the New Forest.—I have never yet found the nest of this species in the forest, but I believe they breed in the locality every season, sometimes not uncommonly. I have frequently seen the birds in the spring and summer, and well recollect, two seasons ago, sitting down in one of the forest glades, near a large swamp, and watching a pair of woodcocks as they chased each other up and down the glade in the evening twilight, making a sort of inward murmuring noise as they flew. On referring to Mr. Wise's book on the 'New Forest' I observe the following note with regard to the breeding of the woodcock. He says:—"Many a time, in the cold days of March, have I seen the woodcock in the new plantations of Wootton, carrying their young under their wing, clutching them up in their large claws. There, on the ground, they lay their eggs, which are of the same colour as the withered oak-leaves—a dull ochre, spotted and clouded with brown, and are thus easily overlooked."—*G. B. Corbin; Ringwood.*

British Heronries.

By J. E. HARTING, Esq., F.L.S., F.Z.S., &c.

To the archæologist, no less than to the naturalist, a heronry is always an object of interest. The sight of a heron reminds one of a hawk, and recalls to mind the days when our ancestors rode forth with hooded falcons on their fists, and all the accompaniments of bells and jesses, gloves and leashes, lure and cadge, to fly at the largest, and withal the most crafty, of British wildfowl.

This ancient pastime has marked the heron as a bird of no common interest, and has consequently invested his dwelling-place with a charm which attaches to that of no other species, unless perhaps to the eyrie of his enemy, the noble falcon.

Fortunate are those who can boast the ownership of a heronry, and watch from their casement the great gray forms of the herons passing silently to and fro, like some old retainers attached to the family for generations, and inseparably connected with it. The man who would wilfully cut down and destroy a heronry would surely commit a crime. He would deserve, like the evil-doers of old, to be turned into a bird of ill-omen, and haunt the scene of his evil deed bewailing it for all time. Let us hope there are none such.

Modern statistics would certainly seem to show that heronries in Great Britain, instead of decreasing in number, as some have supposed, are steadily on the increase, and this in spite of the persecution which the birds are subjected to at the hands of fish-preservers and prowling gunners.

Many doubtless will be surprised to learn that within the limits of the British Islands the existence of more than two hundred heronries has been lately established. Some months ago, through the medium of that widely-circulating journal the 'Field,' I published a list of all the heronries with which I was then acquainted,* and invited the co-operation of the readers of that journal in adding to and perfecting the list. The result has been the receipt of letters from all parts of the country, enabling me to make some considerable additions; and as no information has reached me during the past three months, it may be presumed that the list is now as complete as it is at present possible to make it.

* See the 'Field' of February 17th and March 9th.

Believing it to be very desirable that the statistics thus acquired should be published in a collected form in some Natural History journal of note, they are now presented to the readers of the 'Zoologist.' Had my correspondents favoured me with more details as to the number of birds in their heronries, the species of tree selected for their nests, and their increase or decrease, and the cause, the list might have been considerably improved; but in most cases it was not easy to obtain this. So far then as I have been able to ascertain, the following heronries are, or lately were, existing in the British Islands, and for convenience they are alphabetically enumerated:—

ENGLAND AND WALES.

Berkshire.—Two in Windsor Great Park; one in Coley Park, Reading (Mr. Monck).

Bucks.—Harleyford (Sir W. Clayton). A pair of herons nested in an oak at Fawley Court a few years ago, but the young were taken, and they deserted the spot.

Cambridgeshire.—One at Chippenham Park (Mr. Thorp).

Cardiganshire.—One at Gogerddan (Sir Pryse Pryse).

Cheshire.—One at Dunham Massey, near Altrincham (Lord Stamford); Combermere Abbey (Lord Combermere); Hooton-on-the-Mersey (Sir T. M. Stanley); Ardley Hall (Mr. Warburton); Oulton Park (Sir Philip Egerton); and Eaton Hall, near Chester (Marquis of Westminster).

Cornwall.—A few pairs nest in Trenant Wood (Mr. Peel).

Cumberland.—One in Gowbarrow Park, near Ulswater; one at Graystoke (Mr. Howard); one, consisting of forty or fifty nests, in Wythorp Woods, near Bassenthwaite Lake (Sir Henry Vane); and one at Gobay Park, near Penrith.

Devonshire.—One at Powderham Castle, near Exeter (Earl of Devon); Sharpham-on-the-Dart (Mr. Durant); Warleigh-on-the-Tamar (Rev. Mr. Radcliff); single pairs build in the woods near Totnes (S. Hannaford); Bellever, Dartmoor (Mr. Templar), on larch trees: Fremington, near Barnstaple (Mr. Yeo); Shute Park, near Axminster (Sir J. G. Pole); and Pixton Park, near Dulverton (Mr. Dodington). This last-named heronry was formerly situated near Combe House, an ancient seat of the Sydenham family, in the parish of Dulverton. From thence the birds migrated to some woods on the Exe, on the eastern side of Pixton, but by successive

moves are at length nearer to their ancient home again. There are now about ten pairs building upon fir trees. There was formerly a colony at Dawlish, but it no longer exists.

Dorsetshire.—One on Brownsea Island, near Poole; Upton, near Wimborne; Bryanstone Park (Lord Portman); Admiston Hall, Kingston Lacy (Mr. Bankes); and Sherborne Park (Mr. G. D. W. Digby).

Durham.—One at Ravensworth Castle (Lord Ravensworth); one at Sands, near Sedgfield; a small colony at Gainford, and another at Wycliffe.

Essex.—One in Wanstead Park, on elms and wych elms (Lord Cowley). Twenty years ago the herons here tenanted some trees at a different spot in the park. They now occupy some tall elms and wych elms upon an island in the largest sheet of water. When I visited the place last there were about thirty pairs of birds. There is another heronry in this county, near Chelmsford, the seat of Sir John Tyrell.

Flintshire.—At Bodryddan, near St. Asaph, the seat of W. S. Conway, Esq., there is a large heronry in old elm trees.

Glamorganshire.—There is a large colony at Hensol Castle (Mr. Fothergill, M.P.) in ash and maple trees; and others at Margam Abbey and Penrice Castle, in oak trees (Mr. Mansel Talbot).

Hampshire.—One at Heron Court (Lord Malmesbury), and Vinney Ridge. Mr. Wise, in his 'History of the New Forest,' p. 273, says, "They first took up their abode in Old Burley Wood, and then removed to Wood Fidley; subsequently to Denny Lodge (1851) and finally to Vinney Ridge. In 1861 fifty pairs at least must have built in its tall beeches." At Wolmer a small colony has lately established itself. Captain Feilden, who visited this heronry last spring, informed me that eight or ten pairs are building in Scotch firs on the brink of a swamp, and that they are strictly preserved.

Herefordshire.—The moor near Hay (Brecon), in a wood of large oaks (Mr. Penoyre).

Kent.—One at Cobham Hall (Lord Darnley); Penshurst Park; and Chilham Park, near Canterbury (Mr. Charles Hardy). Fifteen years ago upwards of eighty nests were counted in the latter heronry.

Lancashire.—Ashton Hall, near Lancaster (Mr. Starkie, M.P.). The nests, about twelve or fourteen, are placed in lofty ash and beech trees, in a wood called Crane's Wood. Claughton Hall,

Garstang (Mr. Brockholes), on elms and sycamores; and Rigg's Wood, near Garstang (Mr. R. W. France); Scarisbrick Hall, near Ormskirk (Lady Scarisbrick). The nests in this heronry, about two dozen in number, are placed in high larch and birch trees.

Lincolnshire.—One in Skillingthorpe Wood, near Lincoln, and one at Swanpool. In addition to these there were formerly one at Manby, near Brigg (on the decline in 1851), belonging to Lord Yarborough, but since destroyed by the felling of the trees; one also at Leake, near Boston (Thompson's 'History of Boston,' p. 676), and one in Muckton Wood, near Louth. It is possible that this last-named may still exist, for on one day during the past autumn several herons were seen flying backwards and forwards over the wood, as if reconnoitring the old site, with a view to reoccupation. There were formerly heronries at Spalding, Donnington and Cressy Hall, but they have been long since deserted. There is one at Haverholme, near Sleaford (Hon. Mr. Finch Hatton).

Merionethshire.—At Talgarth Hall, Machynlleth (Mr. Thruston). About fourteen pairs have nested for the last fifty years on old Scotch firs, and on one or two occasions on larch. Although there are plenty of trees for them they do not increase in numbers, which is strange, for the owner does not allow them to be disturbed. A large rookery adjoins, but the herons and rooks are said to agree well together.

Middlesex.—There were formerly two heronries in the metropolitan county, one near Uxbridge, and one at Osterly Park, the seat of Lord Jersey. The last-named has ceased to exist, and I believe also the former.

Monmouthshire.—One at Pantygoitre (Mr. Berrington), and another at Court Blethyn (Mr. Nicholl).

Montgomeryshire.—One at Peniarth (Mr. W. W. Wynne).

Norfolk.—One at Gunton (Lord Suffield), on an island in one of the lakes: in 1871 there were thirty-one nests. One at Didlington Hall (Lord Bowers); Wolverton Wood, near Lynn; Earlham Kimberley, Old Buckenham, Burnham Avery and East Walton. In addition to these there were formerly others at Claxton, near Reedham, Ranworth, Costessy, Horsey, and Irstead. One, containing about twenty nests, at Taverham Hall, near Norwich (Rev. J. Micklethwaite), is situate in a clump of ash and alders, close to the river Wensum.

Northampton.—One at Althorpe (Earl Spencer); Milton, near Peterborough (Hon. G. Fitzwilliam); and Bulwick (Mr. Fryer). In the last-named heronry about thirty pairs build in high oak trees.

Northumberland.—Chillingham Park (Earl of Tankerville); two at Harbottle Castle, Morpeth, in plantations of Scotch fir (Mr. P. F. Clennell).

Nottinghamshire.—Thoresby Park (Earl of Manvers). A large colony at Clumber (Duke of Newcastle).

Oxfordshire.—In March, 1872, five or six pairs were nesting in oak trees in Far Wood, Southleigh (Col. Harcourt).

Shropshire.—One at the Mere, near Ellesmere.

Somersetshire.—Picton (Earl of Carnarvon); Brockley Woods, near Bristol; and Knowle House, Dunster (Mr. J. Hole), about thirty nests on larch, in existence for fifteen years.

Suffolk.—Herringfleet, near Lowestoft (Mr. Leathes); Cavenham (Mr. Waddington); and Henham Hall (Earl of Shadbroke). There were others formerly at Thrigby; Norton Hall, near Loddon; and Blackheath, near Friston, in fir trees.

Surrey.—Cobham Park (Mr. Harvey Coombe); Ashley Park, Walton-on-Thames (Sir Henry Fletcher); and formerly one at Oatlands, near Weybridge.

Sussex.—One at Windmill Hill, Hurstmonceux (Mr. Curteis); one formerly in Park Wood, near Brede (Lord George Cavendish), and now in Souden's Wood, Brede (Mr. Frewen), consisting of about 400 nests upon oak and aspen; and one at Parham. Concerning the last-named, the owner was good enough to write me in July last as follows:—"The heronry here consists of 117 nests, up to the 15th of April, mostly made of birch twigs, though they are built on fir trees; after the first batch are able to fly, the old birds repair the nests for a second incubation, and the young birds, one or two years old, begin to make new nests, which are not nearly so large as the old nests: they rob the rooks' nests to build their own, and frequent battles ensue between the herons and the rooks, who also rob the herons when they can. The ancestors of these herons are said to have been brought from Coity Castle, in Wales, by the falconer of Robert Dudley, Earl of Leicester, in Queen Elizabeth's time, to Penshurst, from whence they migrated, about sixty or seventy years ago, to Mitchelgrove, near Worthing, and on the trees being cut there they came to Parham in 1832."

Warwickshire.—Warwick Castle (Earl of Warwick); Coombe

Abbey (Earl Craven). A large colony at Rugby, containing about fifty nests (Marquis of Hertford).

Westmoreland.—Dalham Tower (Col. Wilson); and on an island in Rydal Lake (Lady le Fleming). About a dozen nests on larch and Scotch firs at Ingmire Hall (Miss Upton). A pair built on Ramp's Holme, or Berkshire Island, on Windermere, 1851.

Wiltshire.—Bowood (or Beauwood), near Melksham (Marquis of Lansdowne), about twenty nests, and Longleat, near Bath, on old ivy-covered alders on an island (Marquis of Bath).

Worcestershire.—Wedgwood Park, near Droitwich (Sir J. Pakington).

Yorkshire.—One near Boroughbridge (Mr. R. Thompson); one at Walton Hall, containing from fifteen to twenty nests upon oak trees (Mr. Waterton): one at Hutton Cranswick, near Beverley (Mr. Bethel); and formerly others at Stork Hill (hence the misnomer for the locality) and Scorbrough, near Beverley; Swanland Hall, near Hull; and Wetherby Grange (Mr. Gunter). There is one at present at Newton, near Walton (Sir George Cholmley), where there are about sixty nests on larch trees; Eshton Hall (Mr. Wilson); and Flasby Hall, Gargrave in Craven (Captain Preston). The two last mentioned were formerly both at the latter place, on old oaks, but the trees being thinned most of the birds migrated to Eshton, about a mile distant, where they nest in larch trees. Another heronry in this county is at Browsholme Hall, near Clitheroe, in the West Riding (Mr. Parker).

SCOTLAND.

Aberdeenshire.—In 1853 there was a small colony near the manse of Edinglassie, Strathdon. There is one also at Blackhall, near Banchory. In 1864 this last-named heronry was further east, on the property of Colonel Ramsay, of Banchory House: the trees having been cut down, they removed to Blackhall, where they are still undisturbed. In 1864 there were only eight or nine pairs of birds, but now they are more numerous. The nests are placed upon high pine trees.

Argyllshire.—One at Ardnamurchan Point (Mr. Dalgleish), on ivy-covered rocks. Mr. Dalgleish informs me that in addition to this there are two isolated nests on different parts of the same estate, one on the face of a rock in a plantation near the sea, and the other on a rock by the side of a mountain stream, on ivy-

covered rocks. There is also a colony at Loch Sunart, on a woodless island, where the nests are placed on the ground. One at Ards, Isle of Mull (Captain Campbell), and another at Glenmore, near Oban (Mr. McNeill).

Ayrshire.—There are several in this county, amongst others one at Craigie, near Kilmarnock. In 1832 there was a fine heronry at Monkcastle House, in the parish of Kilwinning. The birds afterwards moved some miles to a spot near Eglinton Castle, where the Lugden falls into the river Irvine. Here they nested for some years, but eventually deserted, on account of the persecution to which they were subjected, and the close proximity of the Eglinton Iron Works. A large colony at Largs (Earl of Glasgow) still flourishes.

Berwickshire.—About thirty pairs nest upon beech, larch, and Scotch fir trees at Dunse Castle (Mr. W. Hay).

Clackmannanshire.—A small heronry formerly existed at Gartmorn Dam, but has not been tenanted for some years past.

Cromarty.—Mr. St. John refers to one on rocks, near Cromarty. This is on one of the "Soutars" forming the entrance to Cromarty Firth.

Dumbartonshire.—One at Erskine, on the Clyde, near Glasgow, the seat of Lord Blantyre, in lofty and aged trees.

Dumfriesshire.—One at Jardine Hall (Sir William Jardine); Castlemilk, near Lockerbie (Mr. Robert Jardine, M.P.); and a number of nests in Dumcreiff Wood, near Moffat (Lord Rolls). At Dalswinton, about thirty nests upon ash and larch trees. At Halbeaths, from fifteen to twenty nests, chiefly on Scotch firs. At Dalwhat Water, near Moniane, about a dozen nests built upon firs; and at Longholm, two or three nests on ash trees.

Edinburgh.—A small colony at Dalkeith.

Elginshire.—Hugh Miller, in his 'Old Red Sandstone,' and Mr. St. John, in his 'Tour in Sutherland,' refer to one on the banks of the Findhorn, belonging to the Earl of Moray, but this has long since disappeared: Mr. Harvie Brown states that it was not in existence in 1863. Mr. W. K. Rose, of Edinburgh, however, has recently informed me that there is a probability of its becoming re-established, as "several pairs returned in 1871 to the old spot, and nested in clefts on the high rocky banks and at the roots of weeping ash trees overhanging the river."

Fifeshire.—A large colony at Downibristle, near Aberdour (Earl of Moray).

Forfarshire.—There was a heronry within the last few years at Kinnaird Castle, but was deserted in consequence of the old spruce firs being cut down.

Haddington.—Three colonies in Binny Wood (Lord Haddington).

Islay.—Mr. Thompson, in his 'Birds of Ireland,' has referred to one on broken, rocky ground, near Ardimersey Cottage. There is one near Islay House, on larch and ash trees, and one on the walls of a ruined castle on an islet in Loch a-Gurim (Elwes, in Gray's 'Birds of the West of Scotland.')

Isle of Iona.—A colony on this island is referred to in Gray's 'Birds of the West of Scotland.'

Isle of Jura.—One on the ground, on the top of a high steep bank at Inverlussa, is recorded in the work last quoted.

Isle of Rum.—In 1869, according to Mr. Gray, there was a nest in this island on the face of a cliff.

Kincardineshire.—In 1865 a few pairs were nesting at Fetteresso, and there used to be a colony at Inglesmaldie, near Fettercairn. There is a small heronry at Arbuthnott, the seat of Viscount Arbuthnott, who is very anxious they should be preserved.

Kinross-shire.—A single nest in a clump of low bushes on an island in Loch Leven, adjoining that on which the castle is situated.

Kirkcudbrightshire.—Heron breed constantly along the wooded cliffs which face the Solway Firth, in the parish of Southwick. From five and twenty to thirty pairs nest annually at St. Mary's Isle, the seat of the Earl of Selkirk. The nests are placed chiefly in old ash and beech, a few on the tops of old pines. This heronry is known to have been in existence sixty years ago. At Dalry there is a flourishing heronry, containing from twenty to thirty nests, on spruce firs. A small heronry existed formerly on the estate of Compton, near Kirkcudbright, but the birds deserted the place in 1866.

Lanarkshire.—An old-established heronry on large spruce firs in Glespin Wood, near Douglas. In June, 1870, a single nest was taken on an island in the centre of a loch near Douglas Castle, the seat of the Earl of Home, and in 1871 two pairs nested in a wood about a mile from this loch.

Morayshire.—One in this county is referred to by Hugh Miller in his 'Old Red Sandstone,' p. 217, but probably this is the Findhorn heronry mentioned under Elginshire.

Orkney.—Four or five pairs of birds nest on cliffs on the west shore of Pomona, about a mile north of the Black Craig of Stromness. Mr. Harvie Brown saw three nests containing eggs on the ledges of the rocks in 1863. They were placed about fifteen feet from the top of the cliffs, which are at that point about 350 to 400 feet high.

Perthshire.—A few pairs nest by Loch Dochart. There are several nests in the large woods at Tulliallan Castle, and from five to seven pairs nest annually in a wood near Blair Castle. In 1857 there was a single nest in the King's Seat, at Dunkeld.

Renfrewshire.—At Castlesemple, on tall spruce-firs (Mr. H. Lee Harvey). In 1871 three nests adjoined a rookery, which caused a good deal of fighting between the rooks and herons. Six or eight pairs build in fir trees at Inverkip, near the seat of Sir M. S. Stewart, Bart.

Ross-shire.—There are a few colonies on small islets in secluded lochs. Mr. John Bateson, of Shieldag, by Gairloch, has a small heronry on a hill-side, amongst heather-clad rocks, close by his shootings.

Roxburghshire.—A large colony at Rule Water at Wells (Sir W. Elliott, Bart.) with offshoots at Minto, and in 1871 at Mount Teviot; another at Pennilheugh House. In a lone narrow glen at Swindean, between two hills of the Cheviot range, there is a heronry on the property of his Grace the Duke of Roxburgh. The nests, from twelve to sixteen in number, are placed in ancient alder trees. An account of this heronry, by Mr. J. Robson Scott, appeared in the 'Proceedings of the Berwickshire Naturalists' Field Club' for 1865.

Stirlingshire.—One at Dunmore. Only one or two pairs bred there many years ago, yet in the recollection of several persons still living. The nests were placed upon very high beech trees of great age. In 1868 a single nest containing two eggs was found in Dunmore Wood. It was in a spruce-fir, about thirty feet from the ground. At Loch Lomond a few pairs nest on an island near the head of the loch; and there is a colony at Polmaise.

Sutherlandshire.—Twelve to fifteen pairs nest on low birch trees on an island in Loch Ailsh. Many of the nests are placed so low

that they can be reached from the ground. There was formerly a colony at Loch Cama, but it was deserted about the year 1862, and taken possession of by rooks, the first colony of the latter species in the West of Sutherland. At Loch Beannoch Stoir there were from twenty to twenty-five pairs in 1869 in the same situation as at Loch Ailsh, *viz.* on a large island covered with birch trees, from twelve to twenty feet high. Two other islands on the same loch, with apparently equal advantages to this, are not made use of. Mr. St. John refers to one on an island on the loch near Altnagallcanach. A heronry, containing about a hundred nests, existed a few years ago on an islet in a loch under Ben More, the property of Sir C. Ross. The nests were destroyed one spring on account of the damage done by the owners to the fishing. Only a few pairs still exist there.

Wigtonshire.—In this county there are several colonies. (Gray, 'Birds of West of Scotland.')

IRELAND.

Antrim.—Shanes Castle Park (Lord O'Neill) and Lissanoure Castle.

Cork.—Bantry House, and Adrigool Lodge (Lord Bantry); Castle Mary (Mr. Longfield); Macroom Castle; Castle Martyr Park (Earl of Shannon); Maryborough, near Cork (Mr. E. Newenham); and Coolmore, near Cork (Mr. and Lady Helena Newenham). Innoshannon, on the Bandon River (Mr. Frewen), about eight or ten nests in beech trees; and Bowen's Court, near Kildorrery (Capt. R. Coole Bowen), where the herons build on the same trees with the rooks. Dromore, Mallow (Mr. Newman); Dromorone, near Bandon (Mr. Wren). In the spring of 1872 there were twelve nests here.

Donegal.—Malin Hall (Mr. Harvey), about a dozen nests. Ards on Sheephaven Bay (Mr. A. J. R. Stewart) upwards of seventy nests.

Down.—Belvoir Park, near Belfast; Hillsborough Park (Lord Hillsborough); Seaford (Mr. Ford); and Killileagh Castle. Formerly on an island in Lough Archery, on the ground. A large colony at Morne Park, near Rostrevor; and another on Mount Stewart, near Newtonards (Marquis of Londonderry).

Dublin.—Howth Castle (Lord Howth); Malahide Castle (Lord Talbot de Malahide); and Marino, Dublin Bay (Lord Charlemont).

Fermanagh.—One on an island in Lough Erne, the property of the Marquis of Ely. The nests are placed on old ivy-covered ash trees. Within the last ten years this colony has increased from two pairs to six or seven pairs. Another on an island in a small lake at Castle Coole (Earl of Belmore), but only two or three pairs. In the trees on the opposite side of this lake about thirty cormorants have their nests.

Galway.—One at Lough Athry, and another at Newport House.

Kerry.—One at Templemore (Sir J. Carden). Several nests were observed on the face of a cliff at Dingle by Mr. E. W. H. Holdsworth. At Crotta House, near Tralee, on very old birch trees covered almost to the tops with ivy, there were about twenty birds in 1871 (Mr. J. Beale Brown). At Tanavalla, near Listowel, there are about the same number of birds nesting in fir trees (Mr. Elliott).

Kilkenny.—A colony at Kilfane (Sir John Power).

King's County.—Ballynaminton Clara (Rev. P. Marsh). Parsonstown, the seat of Lord Ross, in the branches of old trees overhanging a recently-formed pond.

Limerick.—At Mount Coote, Kilmallock (Mr. C. J. Coote), there are between twenty and thirty nests in elm, lime and Spanish chesnut trees.

Longford.—One at Edgeworth's Town, on beech trees.

Louth.—One at Beaulieu, near Drogheda.

Mayo.—One at Westport House, and another at Castle Macgarrett, where Lord Oranmore informs me as many as fifty herons often build.

Meath.—On a small island in a lake at Drewstown, near Athboy (Mr. M'Veigh).

Roscommon.—French Park (Lord de Freyne).

Sligo.—Banada, on the River Moy.

Waterford.—Dromana and Salter's Bridge, near Clonmel; and Kilcommon demesne.

Westmeath.—In a grove on the property of Mr. Gibbon.

Wexford.—At Bargy Castle, Ballycoily (Major Harvey), a heronry has been established for at least a century. In April, 1872, there were fifty-six old birds and twenty-eight nests.

Wicklow.—At Ballyward there is a heronry belonging to Mr. Fennimore.

Should any readers of the 'Zoologist' be enabled to add either to the number of heronries above mentioned, or to the particulars respecting them, any communication on the subject will be acceptable.

J. E. HARTING.

24, Lincoln's Inn Fields.

Squirrel Swimming.—Southwold, Suffolk, August 19. Walking home along the river wall about 7 A.M. this morning, my brother observed an animal swimming to land some three or four yards from the bank; he ran to intercept it, and found it to be a squirrel: it swam with ease, and after landing on the mud jumped into a pool of water in order to reach the river wall, without the slightest hesitation. On my brother's approach it grunted in the way peculiar to these animals: it must have crossed two or three ditches and the river, in all about seventy yards of water, and was no doubt on its way to some firs about two hundred yards distant, but where it came from must be a matter for conjecture, as there were no suitable trees within some distance.—*II. Durnford; 1, Stanley Road, Waterloo, Liverpool.*

Montagu's Harrier.—It is scarcely worth noticing specimens of this harrier in the Land's End district, for their occurrence is now quite frequent, and far more so than its congener, the common harrier. They breed every year in the Lizard district, where several have from time to time been trapped (see former numbers of the 'Zoologist.') A female with a fine bay immaculate breast and belly, with the upper plumage dark umber-brown, with ferruginous edgings denoting the immature plumage of birds of the year, was brought here a day or two since from the Lizard. I have mentioned in a former communication that the most tempting lure for this species is the common viper.—*Edward Hearle Rodd; Penzance, September 12, 1872.*

Dartford Warbler, *Sylvia undata*, Boddaert.—Is abundant in the furze-covered commons included in the area of Wolmer Forest, Hampshire. At the end of April this year, when walking over the forest with Mr. Howard Saunders, we disturbed seven or eight of them within a radius of fifty yards, from furze-bushes on Polecat Hill. They are not confined to this spot, for I have noticed them distributed over Weaver's Down, and all the other furze-commons in the neighbourhood. Two nests with eggs were sent to me this year from Wolmer.—*H. W. Feilden; Woolwich.*

Baillon's Crake.—The shooting of a small crake near Ramsay, Isle of Man, in the year 1847, will be found recorded in the 'Zoologist' (Zool. 5280), which, on account of its diminutive size, was taken to be the little crake, and it is only of late that I have felt sure that it was not the *Crex*

pusilla, but Baillon's crake, which according to the undermentioned authors is smaller than the little crake, and somewhat differently coloured and marked, being distinctly and regularly barred on the sides, and towards the vent with black and white, as my bird was. Macgillivray says that Baillon's crake is 7 inches in length; Yarrell, $6\frac{1}{2}$ in.; Temminck, 6 pouces 7 ou 8 lignes; Morris, $5\frac{1}{2}$ to $6\frac{1}{2}$ in.; Jardine, 4 in. at the most. This Scotch specimen, if not a young or dwarfish bird, must have been a *rara avis*, less in size than the common wren. Buffon might have accounted for it by saying, "Cette difference peut être attribuée à l'influence du climat."—*Henry Hadfield; High Cliff, Ventnor, Isle of Wight, September 6, 1872.*

Whimbrel near Stratford and Dunlin near Leamington.—On the 7th of September I obtained a whimbrel in the flesh at Stratford-upon-Avon, with the information that it had been shot at Alvestone, which is close by. Nor was this the only frequenter of the shore, which came under my observation, for at one of the Leamington birdstuffer's I saw a common dunlin, which had been recently shot, I was told, at Radford, a village about two miles from the town. The occurrence of such birds as these in the centre of England is interesting.—*J. H. Gurney, jun.; Manor House Hotel, Leamington.*

Supposed Occurrence of Wilson's Snipe in Cornwall.—Having had an opportunity of examining the snipe referred to by Mr. Rodd in the July number of the 'Zoologist' (S. S. 3149), I am enabled to say that it is not the American bird, *G. Wilsoni*, but a variety of the common species, with which English sportsmen are more or less familiar. Wilson's snipe has sixteen feathers in the tail; the European bird has fourteen. The specimen in question, it is true, possesses sixteen, but in this respect only does it resemble the American species. The longer and stouter bill, longer tarsi and toes, broad outer tail-feathers, and general colouring, especially the colour of the axillary plumes, indicate its relationship with our well-known British bird. The American species, however, has occurred at least once in England, a specimen having been killed in the grounds of Mr. Charles Pascoe Grenfell, at Taplow Court, Bucks, in August, 1863. This specimen, as I have stated in my recently-published 'Handbook of British Birds' (p. 143), was forwarded in the flesh to Mr. Gould for identification, and while in his possession I had an opportunity of examining it. Strange to say, the tail-feathers numbered only fourteen, but in other respects it could not be distinguished from authenticated specimens of *G. Wilsoni* procured in America. It may have lost the outer tail-feather on each side, these feathers being shed during moult in pairs, or it may never have possessed more than fourteen, for it appears that the number of tail-feathers is not invariably constant. Besides the specimen with sixteen tail-feathers referred to by Mr. Rodd, another example of the common snipe with the like number was sent from Euniskillen to Sir William Jardine, by Mr. C.

A. Gordon, of the 57th Regiment, and is mentioned by Mr. Thompson in the Appendix to the third volume of his *Nat. Hist. Ireland*, p. 447; and a great snipe (*G. major*) shot at Camelford, Cornwall, in November, 1868, had eighteen instead of sixteen feathers in the tail ('*Zoologist*, 1868, p. 1482). In a large series of examples more or less variation of colour prevails, and in general appearance the American snipe (called by sportsmen in America the "English Snipe") certainly resembles very closely the Old World species. It is, however, smaller and less robust; has a shorter and more slender bill; a shorter tarsus and middle toe; a tail of sixteen feathers, with the outer one on each side much narrower; the dorsal plumage more variegated, that is, less strongly marked with longitudinal buff streaks; and the flanks and axillary plumes more conspicuously barred with dark umber-brown. The measurements vary as follows:—

		Bill.	Tarsus.	Mid. toe.
Common Snipe.	- -	2·7 in.	1·3 in.	1·3 in.
Wilson's Snipe.	- -	2·4 „	1·2 „	1·2 „

the middle toe being measured without the claw. In a large series of both species I do not find that the length of wing differs to any appreciable extent, the average length from the carpus to the end of the first primary being in both about five inches.—*J. E. Harting*; 24, *Lincoln's Inn Fields*.

Occurrence off Penzance of a *Syngnathus* hitherto unobserved as British.—I have taken a *Syngnathus*, which I believe to be hitherto unobserved as a British fish. Yarrell, Couch and Gosse all agree in describing as British fish six species of *Syngnathus* only, of which two (*S. acus* and *S. typhle*) have true caudal fins, two (*S. æquoreus* and *S. anguineus*) have rudimentary caudal fins, and two (*S. Ophidion* and *S. lumbriciformis*) have no trace of any caudal fin, but have a round tail ending in a fine point. Couch mentions also a doubtful specimen (belonging to a species having a caudal fin), of which the specific character was "a narrow membrane which ran along the ridge of the back to near the dorsal fin" (vol. iv. p. 357). He figures it as a variety of *S. æquoreus*. My specimen differs specifically from the four first-named species (including Couch's doubtful specimen) in having no trace of any caudal fin. It is not *S. lumbriciformis*, which I know well; and it differs from *S. Ophidion* in having a remarkably blunt tail, and in having no scales or plates along the side.* Full two-thirds also of the dorsal fin are in advance of the vent, and the fin-rays of this fin are forty-three, with the last ray bifid. Its colours also are peculiar: it resembles *S. Ophidion* in the straightness and proportions

* The plates of *S. Ophidion* are much less strongly marked than those of the other species.—*T. C.*

of its nose. The specimen is sixteen inches and four-eighths long over all; vent nine inches and four-eighths from tip of the snout; dorsal commences seven inches and three-eighths from tip of snout, is three inches long, and has forty-three soft rays, the last bifid; no other fin of any sort; greatest depth of the fish four-eighths of an inch at four inches and six-eighths from snout, and greatest girth at same place. Form nearly cylindrical, tapering from the point of greatest girth to tail, regularly with the exception of a slight depression immediately behind the vent. The tail at its extremity had a clear diameter of one-sixteenth of an inch, and under a sixteen-magnifying power showed a smooth unbroken surface, with no sign whatever of a caudal fin. The very slight variance from the cylindrical which the body shows is in the direction of a pentagonal form. There are just perceptible a ridge on the belly, one on each lower side, and one on each upper side of the fish. The skin is quite smooth and clean, of a rich red-brown ground, burnished so as to make the fish seem semi-translucent (towards the tail it was actually so), and crossed at every seventh of an inch from head to one inch behind vent by perpendicular lines of a steel-blue or gray, extending from just above the upper side ridge to the lower side ridge, alternately straight-sided and zigzag, and becoming duller in colour as they approached the vent; these lines were each about one forty-eighth of an inch wide, and there were sixty-four of them in all. The back is perfectly smooth, and is as far as the dorsal faintly speckled with the same blue or gray colour. Three hours after the fish was dead the back exhibited the smooth appearance of life only when it was slightly arched. When the fish was laid flat on its belly it was seen that each zigzag line of the side was connected with the corresponding zigzag line on the other side by a crease over the back, and these creases continued regularly to the tail far beyond the point at which the stripes ceased to be visible. In the belly ridge exactly underneath each zigzag there was (after death) the appearance of a little notch or depression, but it was not perceptible to the touch. As the fish became drier the spots at which each zigzag crossed the side ridges became the centres of a set of radiating lines, no doubt corresponding to the scales of the other species, and rudimentary in this specimen. There was no marsupial pouch. Bloch, in the rare edition of his work published 1785-6, describes (vol. ii. p. 104) and figures a *Syngnathus* which he calls "le serpent de mer," and identifies with the *S. Ophidion* of Linnæus and the "little pipe-fish" of Pennant. He says it is distinguished from all other pipe-fishes by its round instead of angular body; that it is articulated like a worm, having along its sides "feeble" angles crossed (*interrompues*) by four blue lines (but he figures these lines as longitudinal): general colour green; dorsal fin-rays thirty-four, and no other fins; fish of the size of a swan-quill; habitat, North Sea and Baltic. This description is nearer my specimen than any other; but the differences are clearly sufficient to distinguish the

two, and to justify the view that Bloch's identification of the fish as *S. Ophidion*, *Linn.*, is correct. The size of my fish forbids my supposing it to be the immature young of any species, and unless some other correspondent of the 'Zoologist' can kindly set me right, I shall hold that the species is new as a British fish, and suggest for its name, the "blunt-tailed pipe-fish" (say *S. breviaudatus*). I have taken a cast of the fish (by means of gelatine) in plaster of Paris, and have also preserved the specimen; but neither of these will show the beautiful semi-translucency and rich colouring of the living animal.—*Thomas Cornish; Penzance, September 16, 1872.*

Occurrence of the Tunny at Plymouth.—On the 22nd of July a very large specimen of the tunny (*Thynnus vulgaris*) was captured in shallow water, on the sand-banks of the Laira estuary, at the mouth of the Plym, by some bargemen, who attacked it with their shovels. This fish was nine feet long, five feet ten inches in girth, weighed about eight hundredweight, and took twelve men to lift it into a cart. This seems an enormous size for a fish of the mackerel family, but, in a measure, makes good what is written by the ancients concerning it. I possess a photograph taken from the specimen just after death.—*J. Gatlcombe; September 5, 1872.*

[Mr. J. Brooking-Rowe also kindly sends a notice of the above. He states that the tunny was exhibited in two or three villages, and eventually sold to a farmer for manure.—*Edward Newman.*]

Capture of *Coronella laevis* at Pokesdown, Hants.—In accordance with my promise to that effect I send you information of the capture of another full-grown example of *Coronella laevis*, or *Coluber Austriacus*, in this neighbourhood. I received it alive, a few days since, from my friend, the Rev. A. C. Hervey, who captured it at Pokesdown, about two miles from hence.—*E. B. Kemp-Welch; Bournemouth, August 30, 1872.*

Larva of *Eupithecia togata*.—General colour dull, pinkish brown; central dorsal, subdorsal and spiracular lines whitish, indistinct, especially the two latter; skin wrinkled; body sparsely studded with black tubercles and short hairs. Head and collar glabrous and horny, dusky brown. A queer internal-looking creature, strikingly like a miniature *Cossus ligniperda*. Feeds inside the buds and young shoots of spruce fir. I am indebted to the kindness of Mr. Hellins, of Exeter, who reared it from the egg, for the opportunity of seeing and describing this, I believe, hitherto unknown larva. Mr. Buckler has succeeded in taking its portrait. Hatched July 18; full-fed the end of August.—*H. Harpur Crewe; The Rectory, Drayton-Beauchamp, Tring, September 2, 1872.*

The Birds of the Færoe Islands. By Capt. HENRY W. FEILDEN.
(Continued from Zool. S. S. 3257).

NATATORES.

109. *Uria troile*, Linn. *Uria ringvia*, Brunn. Common Guillemot. Ringed Guillemot. *Native name*, Lomvia.—Having paid considerable attention to these birds, both in Britain and Færoe, I am inclined to look upon them as one and the same species. The two varieties are to be found breeding together indiscriminately, and the eggs of the ringed guillemot are as liable to difference of coloration as those of the common guillemot. For an account of a series of observations made in the Outer Hebrides during the spring of 1870, by my friend Mr. Harvie Brown and myself, in reference to this subject, see Gray's 'Birds of the West of Scotland,' p. 426. We there came to the conclusion that in the Outer Hebrides the ringed variety was in the proportion of one to five, and I think that the same estimate would hold good in Færoe; an examination made by me on one occasion of a large number that had been killed by the fowlers on the island of Skuoe, gave nearly the same result. Wolley remarks that he found the ringed guillemot in Færoe in the proportion of perhaps one to ten: that it lays a similar egg to the common guillemot, as he ascertained in several instances, and that it was of both sexes, and not as the natives thought, of one sex, some of them saying it was the male and some the female, and he came to the conclusion that he could not see anything to lead him to suppose that there existed a specific difference between the two varieties. In the Færoe Islands the guillemot, next to the puffin, is the most abundant of the rock-birds, and supplies a large proportion of the food of the islanders. On the magnificent cliffs of the islands of Skuoe, and Great Dimon, it congregates during the breeding-season in countless multitudes, and, when sailing underneath these nurseries, the noise made by the wings of the continuous ascending and descending flights of guillemots and puffins is like that of the wind rushing through a number of telegraph-wires during a gale. Landt mentions that the number of the winged tribes swarming between Great Dimon and Skuoe during the summer is incredible, that they almost darken the air and stun the ears with their piercing cries, and that two people in the same boat cannot hear each other speak. This is either an exaggeration, or else the rock-birds must have decreased

since Landt's time; still, it is a wondrous sight, passing along the base of these cliffs during the breeding-season, for the water is then covered with guillemots, puffins and razorbills, that are so tame and so regardless of man that they just dive to avoid the stroke of the oars, and come up again a few yards from the boat; whilst, at a distance of a couple of miles from the Fugleberg, where the limit of protection ceases, these same birds are exceedingly wary, and hardly allow a boat to approach them within gunshot without diving. The breeding-places of the guillemot and other rock-birds throughout Færoe are protected from the 1st of March to the 15th of August: during that period no gun may be fired within a distance of two English miles direct to sea, and one mile on each side of a Fugleberg. The breeding-places of the shag are protected all the year round, whilst on Mygenæs, where the gannet breeds, the date is from the 25th of January to the 25th of October. No gun may be fired within one English mile of an eider duck breeding establishment: the punishment for the first infraction of the law is a fine of from one to ten rix-dollars, and a subsequent conviction entails loss of gun and sporting implements, and a further fine. The various methods of fowling employed by the islanders are minutely described by Debes and Landt, and more recently by Müller (Færoernes Fuglefauna). The rules for the division of the birds, on the conclusion of a day's fowling, are of very ancient date, and extremely complicated to a stranger, whilst they vary in different islands.

110. *Uria grylle*, Linn. Black Guillemot. *Native name*, Tajsti, —This bird is a resident, and tolerably abundant throughout the islands. In the North Isles, owing to the paucity of population, and consequently fewer guns, it is more abundant than in Suderoe. The black guillemot is an innocent and confiding bird, and seems to have little fear of man; consequently it often falls a victim to the juvenile gunners. Formerly a tradition was prevalent that the man who shot this bird would not have good luck out fishing, but now little respect is paid to this old-fashioned idea, and I have often been told by the boatmen to shoot this gentle bird, my demurring to do so being considered more in the light of my want of skill as a gunner than any other reason. I found it very numerous near to the village of Videroe, where it breeds on the land belonging to the pastor: the nests were placed in crannies and in holes between rocks, at an elevation of two to three hundred feet above the sea, and it was a pretty sight to see these birds with their bright red

legs and feet, which they use as rudders, passing and repassing from the sea to their breeding-haunts. On the 8th of June, when at Videroe, I took a couple of eggs, deeply incubated, from a hole; the eggs were laid on the bare rock.

111. *Arctica alle*, Linn. Little Auk. *Native name*, Fulkobi.—This truly arctic bird is not an uncommon winter visitor, and is frequently picked up inland, being blown ashore by the violence of the winter gales. Müller noticed a single flock in Naalsoefjord, on the 8th of June, 1857, the weather at the time being cold and windy. It is scarcely necessary to add that it does not breed in the Færoe Islands.

112. *Fratercula arctica*, Linn. Puffin. *Native name*, Lundi.—This is the most abundant of all the rock-birds visiting Færoe: it makes its appearance in mild seasons about the end of March, but more frequently during the first week in April. Svabo writes that in 1782, a very cold spring, the first puffin was seen on the 28th of April, fourteen days later than usual. He knew a man who from five o'clock in the afternoon till midnight caught eight hundred of these birds with a hand-net; from two hundred to four hundred was considered an average take. Six puffins are valued as two guillemots or three razorbills for food; three puffins are considered as sufficient for a man servant's meal. Herr Müller related to me the following anecdote, told him by a Thorshavn sailor of his acquaintance:—"In 1867 we caught a young puffin in the harbour of Reykjavik: at first it was very shy, but after a short time it became fond of the ship's dog. We were always sure to find the bird about the dog, and at night they slept together; we fed it with soaked dry fish, but after it had taken to the dog, it did not care for any food but what the dog got. The bird was on board the ship about one year, when the dog went sick and died: the day after the puffin also died; we thought it died of cold, having been accustomed to lie warm at the dog's side." White varieties of the puffin are not unfrequently seen, Herr Müller has two in his collection: I saw a beauty in the flesh, brought from the island of Naalsoe on the 17th of June: it was pure white, with black eyes, and one single black feather on the breast: the legs and bill were of the ordinary colour. There is a legend in the island of Skuoe, which until of late years protected white puffins, for it was said that each of these birds had been the means of saving a man's life. Often when the fowlers have climbed

up from the boat, which is in waiting at the foot of the cliff, the sea rises and the breakers come in so heavily as to oblige the boat to sheer off, and the fowler is left on the Fugleberg; the people in the boat, by throwing a stone with a piece of twine attached, pass up a rope to their comrade, who fastens it to his waist, springs into the sea, and is hauled into the boat. On other occasions, when no rope could be thrown up, the story goes that the man on the cliff caught a puffin, plucked it, and tying a string to its leg cast it into the sea; the bird being cold swam to the boat, and by means of the twine attached to the puffin, a rope was passed up to the man: when this bird recovered its feathers, it became pure white.

113. *Alca torda*, Linn. Razorbill. *Native name*. Alka.—Is abundant, but far less numerous than the guillemot. Svabo writes that the razorbill has two hatching-spots between the legs, that it arrives and departs with the guillemots, which it greatly resembles in its habits, though there are some exceptions, for the razorbills sometimes breed in holes and crevices, like the puffin, which the guillemot never does.

114. *Alca impennis*, Linn. Great Auk. *Native name*, Gorfuglir.—I have endeavoured to collate all the information to be gathered in connection with this bird and the Færoe Islands, and to do so necessitates my copying extensively from the published writings of that distinguished naturalist, Professor Newton, whose researches into the past history of the great auk have been more exhaustive than those of any other living scientific person in Europe, and who thus refers to the subject in "The Gare-fowl and its Historians," published in 'The Natural History Review,' 1865, pp. 467—488:—

"In the Færoes the 'Gorfuglir'—as it was called—was formerly common. Sysselmand Müller, writing in 1862, thinks it was sixty years since the last was killed (Vid. Meddel. Nat. For. 2 ser. vol. iv., p. 58) there, but we believe one or more have been seen later, though the precise year is not to be ascertained. Olaf Worm, in 1655, describes how that he possessed three specimens of the bird, one of which he kept alive at Copenhagen for some months:—

"'Ex Feroënsibus Insulis delata ad me erat avis, quam vivam domi per aliquot menses alui; junior erat, quia ad eam non pervenit magnitudinem, ut anserem communem mole superaret. Halecem integrum unâ vice deglutire valuit, et quandoque

successive tres, antequam ingluviam expleret. Dorsi plumæ adèo molles et æquales, ut holosericeum nigrum æmularetur, venter eximio erat candore. Supra oculos aream rotundam, candidam, Daleri magnitudine habuit, et perspiciliis dotatam jurares (quod non animadvertit Clusius). Nec alæ eam obtinuerunt figuram, quam idem exprimit, latiores enim paulo erant, cum limbo albo. Quocirca meam avem ad vivum depingi curavi, ut Icon esset accuratior.' (Mus. Worm. p. 300). The figure indeed is sufficiently accurate, except that the artist has embellished its throat with a narrow white collar.

"Debes, whose 'Færoa Reserata' was published in 1673, merely mentions the 'Garfogel' as occurring in these islands, adding that he had several times had them, that they were easily tamed, but would not live long inland (p. 130). Mohr, a Færoese by birth, in 1786, speaks of some being caught there most summers (Forsæg Isl. Naturhist. p. 25). Landt, in his 'Beskrivelse over Færøerne,' in 1800, states that the 'Gaarfuglur' was then beginning to become more rare there (p. 254). Graba, who voyaged thither in 1828, prematurely thought it was extinct, and declared that most of the natives did not even know the bird by name, though some old people believed they had formerly seen it at Westmannshavn, and one man, lately dead, told him he had there killed with a stick an old one as it sat on its egg (Reise nach Färo, pp. 198, 199). When Professor Steenstrup visited the islands, he saw the head of a bird preserved upon one of them. In 1849, Wolley (Contrib. Orn. 1850, p. 115) was told by an old man that he had seen one sitting on the low rocks fifty years before, at which time, undoubtedly, it was very rare."

In addition to these authors referred to by Professor Newton, I am informed by Sysselmand Müller that Svabo (Ms. Vols. Roy. Lib. Copen. 1781, 1782) mentions that he never knew of the "Gorfuglir" laying its egg in Færoe, but was aware of a bird being killed on the island of Fugloe from which an egg was extracted.

Oliger Jacobæus, Regius Professor of Medicine, in his Catalogue of the Royal Museum at Copenhagen, published in 1696, a second edition of which was published by John Laurentzen, in 1710, gives a plate and account of the bird which seems to have been pirated in a great measure from Olaf Worm, though his account would lead one to believe that the Royal Museum at

Copenhagen then possessed a specimen of *Alca impennis*. The following is a translation from the Latin original text:—

“Concerning birds and their parts. The Magellanic goose, or penguin, of Clusius (Pl. 1, No. 1), a sea-bird, the Garfugl of the Færoese, is of the kind of geese, though with a different bill. Above it is clothed with soft feathers, equal in length and nearly black, so as to resemble black satin, but beneath with quite white feathers. It has a bill larger than a raven's, the upper part of which is marked with some oblique furrows. Above the eyes it carries a white and almost round patch, nearly the size of an ounce piece of money. Its short and thick neck has, as it were, a collar of white feathers. In place of wings it has small fins hanging at its sides, closely covered with stiff and narrow white feathers, with which some black ones are mixed, and adorned with a white border. By the aid of these it swims with considerable speed. The feet, on which it walks like a dwarf or pigmy with its head erect, are black and very like those of a goose, though they want the hind toes. By virtue of its size, it so far surpasses others of its kind that, overtopping their heads, it establishes a place for itself as chief among them. Our very renowned Olaf Worm, formerly in his house here at Copenhagen, for several months fed with fishes a young bird of this species, which was brought alive from the Færoes, on the shores of which it is abundant. This bird was able to swallow a herring whole at once, and indeed three in succession before it filled its crop. As Clusius and Worm relate, the Dutch first called it *Pingvin* from its fatness, ‘*pinguedo*,’ it weighing sometimes sixteen pounds.”

During my recent visit I landed on the island of Skuoe, in company with Herr Sysselmand Winther, who took me to the cottage of an old man, Jan Hansen, now eighty-one years of age. He is believed to be the last man alive in the islands who remembers seeing a gare-fowl in Færoe, and from a comparison of dates it would appear to be the last recorded instance of the appearance of the bird in these islands; from the attention the natives pay to the arrival and departure of sea-birds, with their frequent visits to the Fuglebergs, and constant journeyings in boats around the isles, it would be very unlikely for any gare-fowl to have since escaped observation. This old man, who is now blind, told me that on the 1st of July, 1808, he went with a crew to the Great Dimon for the purpose of catching rock-birds: upon a ledge at the base of the

cliffs of that island they came across a single garfuglir, which was captured: this bird weighed nine Danish pounds, and on the division of the birds, at the conclusion of the fowling, was deemed equivalent to six guillemots.

In connection with this subject, I trust it will not be deemed out of place my publishing an account of a landing on one of the gare-fowl skerries off Reykjanes, by the crew of a Færoese schooner, in 1813. Through the courtesy of Herr Müller I have been favoured with a copy of the deposition of one of the crew, taken down from his lips in 1858, when he was seventy-one years of age.

“The statement of Daniel Joensen, of Stugaard, island of Vaagoe. In the year 1813 Governor Löbner sent a schooner several times to Iceland for the purposes of trade and to get provisions, there being great destitution in Færoe, owing to the war between England and Denmark. The first trip the schooner took to Iceland, she left Færoe on the 29th of July. The crew consisted of Skipper Hansen, Daniel Joensen* (the narrator), M. E. Berg, Peter Hansen, Paul Medjord, Hans Joensen, from Kollefjord, and C. Hansen, of Fiöuse. On the 24th of August the schooner was becalmed off Cape Reykjanes, and five of the men got into the boat (Skipper Hansen and C. Hansen remaining in charge of the schooner) and pulled to some drangs, and landed on the largest they saw, which was shaped somewhat like the Monk rock (to the south of Suderoe, Færoe), but not quite so high; they could not climb to the top of this drang, but they succeeded in procuring a few gannets, but no guillemots. Just as they were returning on board, the tide drifted the schooner further from them, and then they noticed a lot of birds on a skerry with a flat top: this skerry was further from the shore than the drang they had already visited. They pulled their boat to this skerry, at the east or north-east end was a ledge, and as they approached it they saw that it was covered with gare-fowls. The weather was fine and clear at the time. When they got close to the ledge many of the gare-fowls shuffled into the water and swam away: the boat was kept with its stern to the ledge and backed in on the swell of a wave; Daniel Joensen, Paul Medjord, and H. Joensen sprang on to the ledge, and seized the remaining gare-fowls with their hands, wringing their necks. Daniel Joensen does not remember whether they took fourteen gare-fowls or eleven, but either one or the other

* Daniel Joensen and Paul Medjord were alive this spring.—H. W. F.

number; they saw neither young* nor eggs on this ledge, and as the wash of the sea broke over it, it would have been impossible for eggs or young to have remained there. Many more gare-fowls went to sea than what they killed. The gare-fowls were only on the ledge, and no other birds were seated alongside of them. They then tried to climb from the ledge to the top of the skerry, but found it rather difficult to do so: II. Joensen got up first; he had a short rope with him, with which he helped the others to get up. When they got up they found the top covered with guillemots, and the edges fringed with gannets: they sunk half way to the knees in the dung of these birds: they were very tame, and they killed all they had time to secure: they remained there about one hour in all; then a fog came on which hid the schooner; the tide was turning, and though there was no wind the sea began to rise, which made them desirous to get on board again, they killed about two hundred guillemots, and might have taken more could they have remained longer on the skerry; the guillemots were so tame as to alight on the men as they lay down resting on the skerry. The tide was setting westerly by the compass as they returned to the schooner, and the boat was so full of birds they had to leave some of the dead guillemots on the ledge, but they did not leave a single dead gare-fowl behind them."

Wolley (Contrib. Orn. 1850, p. 116) thus refers to this event:—"I saw Daniel Joënsen, captain of a vessel belonging to Governor Löbner, which went in 1813 to fetch provisions from Iceland to the half-starved Færoese, and brought back some fifty or sixty of the gorrifgle, amongst other birds. They got them on one of the small rocks, which the natives were afraid to visit, near Iceland." On mentioning the discrepancy in the two narratives to my kind friend Professor Newton, he most obligingly favoured me with the following information (in litt. ii. 7, 1872). "I am pretty sure I have at Cambridge the original copy of Daniel Joensen's deposition made in 1858, and if I am not mistaken at Wolley's instance: I think that Wolley, when in Iceland, became aware of some inaccuracies in the notes he had nine years previously taken of Joensen's story, and wrote to Müller, asking him to get both Joensen and Medjord to meet us at Thorshavn on our return, or

* By the 24th of August the eggs would have been hatched, and probably they could not discriminate between adults and young.—H. W. F.

should either or both be unable to do so, to take down their evidence afresh. Medjord came, and I heard him examined by Wolley, who wrote the account I have from his (Medjord's) dictation, but Joensen did not turn up, and Müller furnished the account. It is very interesting to me to know that he is alive still. I have very little doubt that the island on which they landed was the real Geirfuglasker (the one which was submerged in or about 1830), but their accounts I know leave it open whether it might not have been the Geirfugladrángr. The affair happened so long ago that they had no very distinct idea of the relative positions of the two islands, and were not able to identify them on the chart; indeed it seemed doubtful whether either of them had ever before seen a chart of the place."

Herr Sysselmand Winther informed me that the bill of a gare-fowl was formerly in the possession of Ole Johannesen, of Dale, Sandoe, who died in 1845. This bill has been missing for more than thirty years. There is no tradition in Sandoe from whence, or about what date, this bill was originally procured.

115. *Graculus carbo*, Linn. Cormorant. *Native name*, Hiblingur.—Is resident in Færoe, and makes its nests on ledges of the cliffs, in very inaccessible places. I frequently noticed the old birds peering with outstretched necks from their nesting-places at the passing boat. They are shy and wary when in the water, and will not generally allow a boat within gun-shot, but on more than one occasion I could have shot examples had I been desirous of doing so. Svabo mentions that it has flying young ones by the end of June.

116. *Graculus cristatus*, Linn. Shag. *Native name*, Skarvur.—Is far more abundant than the preceding species, and is likewise a permanent resident. Svabo mentions that it commences to breed in the end of March, and that in the second year it has whitish legs: he refers to a plague that sometimes breaks out amongst them; such a visitation occurred in 1772. Landt writes, "The young especially, when taken from the nest, are amongst the best of the Færoe sea-fowl for the table. When properly prepared and roasted they taste nearly as well as roast hare." I have myself been asked to shoot them for the table, and have eaten them in sausages: we found them very palatable in this form.

117. *Sula bassana*, Linn. Gannet. *Native name*, Sula.—The breeding-places of the gannet in Færoe are confined to the Holm

of Myggenæs, the most western island of the group. There, on two isolated stacks, called Pujgarsdrengrur and Fleatidrengrur, they breed in great numbers; also on the north-eastern face of the Holm. I visited Myggenæs on the 14th of June, but unfortunately the sea was too rough to admit of my crossing to the Holm, from the island; I had therefore to content myself with walking to the western end of the island, which overlooks one of the breeding-places: from there I counted one hundred and thirty-six gannets sitting on eggs, or standing near their nests. The two detached stacks at the western extremity of the Holm, already referred to, were white with these birds. Svabo, writing in 1782, mentions that this bird, after hatching its two eggs and rearing its young, disappears from Myggenæs on the 10th November. The old ones are caught in the middle of April, when the nests are built, but no eggs in them; when the wind is blowing on the coast, with hail, they sleep the soundest. The young ones are taken three weeks before the 29th September. The old ones are taken twice in the spring, to the number of two hundred; the yearly take of young ones is about the same. The 25th January is a festival in Myggenæs, in consequence of the arrival of the gannets. One of these birds is considered equivalent to six puffins for food. The young one with down on it is called "Ompel." These remarks of Svabo apply with full force to the present day. Wolley (Cont. Orn. 1850, p. 113) mentions, "The name 'Sula,' I was told, has a reference to its quickness of sight. It is worthy of note that each nation modifies the root of a name to some signification in its own language, as Mr. Strickland has admirably illustrated in his etymology of the word 'Dodo.' 'Sula' is Soland, 'Jan Van Gent' is Gannet, and perhaps both these last from the German 'Gans.'"

118. *Sterna hirundo*, Linn. Arctic Tern. *Native name*, Tedna.—Is the *Sterna brachytarsa* of Graba (Reise nach Faro. p. 218, 1830), and is, I believe, the only species of tern found in the Færoe Islands. Landt writes, "It comes to Færoe about the middle of May, and remains till Michaelmas. It is seen everywhere, but in some places in immense numbers. It lays two eggs in the uncultivated fields where the soil is bad: they are the best tasted of all those found in the country." Wolley, in referring to this bird, says, "I found no other species." Owing to the coldness of the weather, the first I noticed were in Suderoe, on the 25th of May, ten days later than their usual time of arrival. I

took their eggs, the first I met with, on the 21st of June, fresh laid. This tern is very abundant, and I noticed them at mid-day resting on the shingle, with their breasts pressed to the ground, in flocks of several hundreds: late in the evening we came across them roosting on the fells in large flocks, at a height of three or four hundred feet above the sea. We often were delighted by watching them hovering over the meadows in flocks, feeding on insects.

119. *Rhodostethia Rossi*, Sabine. Cuneate-tailed Gull.—A specimen of this exceedingly rare arctic gull was shot on the island of Suderoe, when in company with a blackheaded gull (*C. ridibundus*), on the 1st of February, 1863: it was sent by Herr Müller to the University Museum of Copenhagen. This specimen is referred to by Professor Newton in the 'Ibis,' 1865, p. 103, as being one of the five specimens known to him to be in scientific collections in Europe. Herr Müller informed me that there was a second specimen of this bird in the Museum at Copenhagen.

120. *Xema Sabini*, Leach. Sabine's Gull.—Herr Müller records the capture of this bird in Færoe, and gives the measurements of one shot near Thorshavn on the 26th of January, 1856 (Færoernes Fuglefauna, p. 72).

121. *Chroicocephalus ridibundus*, Linn. Blackheaded Gull. *Native name*, Fransatedna.—There is only one locality in the Færoe Islands where this bird breeds at present, and that is a little island in Toftvatn, a lake in Osteroe. I visited this lake on the 4th of June, and noticed some seven pairs flying over the water; the islet on which they breed is not above fifty yards from the shore, but the water between is deep and was very cold on the occasion of my visit: I swam, however, to the islet, and found several nests, one with a single egg, another with three deeply incubated; a half-grown young one ran away from between my feet when I landed on the islet, and took boldly to the water. It is only of late years that this bird has been noticed breeding in Færoe, having probably been overlooked, for Wolley mentions that in a swampy valley, where he found the rednecked phalarope breeding in 1849, he was told that a pair or two of blackheaded gulls had been seen the summer before.

122. *Rissa tridactyla*, Linn. Kittiwake. *Native name*, Rida.—Müller mentions that this bird is seen in winter, though of course not in the same abundance as in the breeding-season, when it is by far the most numerous of the sea-gulls in Færoe. No words of

mine can give an adequate conception of the multitudes of these gulls; they almost rival the puffins in number. From morn till night they follow the line of coast in never-ending streams, wending their way to or from their breeding-places. I have watched them for hours passing in continuous flocks of thousands alongside the cliffs, each bird with a piece of grass or moss in its bill: on the island of Sandoe are two small lakes, which seemed to be a favourite bathing-place for these birds; the surface of the water was literally white with them, and the narrow valley leading up from the sea to the lakes was thronged with them hurrying to and fro. One of their nesting-places, on the magnificent cliffs of the Great Dimon, is the finest sight of the kind I have seen. A visitor lands on the ledge, only accessible in fine weather, at the base of the cliffs, and then he has to scramble along, between the sea and the face of the rock, for about half a mile, before reaching the only spot where it is possible to ascend the island. On one side is the sea dashing against the rocks, looking as if each wave was ready to sweep over the ledge; on the other hand the wall of rock rises perpendicularly to a height of six or seven hundred feet. There the kittiwakes build in countless myriads, in a vast colony to themselves; the nests commence at a height of twenty or twenty-five feet from the ledge, and then continue without intermission to the top of the cliff. Our visit was made in the height of the laying-season: each nest had an owner seated on it, and generally the mate was perched alongside; by yelling and shouting we managed to make some of the birds near us leave their nests; then the disturbance became general, and the kittiwakes, tier by tier, left their nests, giving the appearance of a vast white sheet rolling up from the face of the cliff and dissolving into snow. The noise was deafening for a few minutes, but soon the birds settled down on their nests. The kittiwake is much esteemed for the table, and the inhabitants are constantly shooting them; we ate them and found them tolerable. On one occasion, in the North Isles, I fired four barrels at short range into an enormous flock of them, seated on the water; the result was, twenty-one picked up, to the delight of our crew, who were thus provided with a good supper.

123. *Pagophila eburnea*, Phipps. Ivory Gull. — Müller (Færoernes Fuglefauna, p. 72) writes, "of this species I have only obtained two examples, one adult, and a young bird, procured at Sorvaag on the 12th of March, 1858." The same gentleman kindly

informed me that in the winter of 1862 and 1863, he received a beautiful adult killed near Eide, Osteroe; also a live one from the same locality, which lived in captivity for six months.

124. *Larus canus*, Linn. Common Gull. *Native name*, Ujslandsmaasi.—Müller records it as a spring visitant, and remarks that he has seen several examples of it. I did not notice it during my tour through the islands.

125. *Larus islandicus*, Edm. Iceland Gull. *Native name*, Valmaasi.—Herr Müller informs me that on the 4th of September, 1870, he observed an old bird of this species on Naalsole: the adults are seldom seen in the islands, but the young are well-known as winter visitants.

126. *Larus fuscus*, Linn. Lesser Blackbacked Gull. *Native name*, Likka.—Arrives in the beginning of April, and leaves in September. It is very abundant throughout the islands, nesting on the ground in the vicinity of lakes, and also on the fells; its eggs are much sought after by the inhabitants. Herr Müller informs me that it is the only one of the gulls that he has seen feeding at midnight. In 1869 he first observed this bird on the 14th of April, in 1870 on the 18th of April, and in 1872 on the 6th of April. This bird is a robber of eggs, and the whimbrel and oystercatcher wage war against it whenever it approaches the vicinity of their nests.

127. *Larus argentatus*, Brunn. Herring Gull. *Native name*, Fiskjimaasi.—It remains the whole year round in Færoe: it is by no means as abundant as the preceding species; indeed, during my tour, I saw few of them. I noticed a breeding-place of this species in the cliffs between Saxen and Westmanshavn.

128. *Larus marinus*, Linn. Great Blackbacked Gull. *Native name*, Svartbeâkur.—Is resident and not uncommon. I did not observe this bird nesting in colonies as it does in the Shetlands and in the Outer Hebrides. On the occasions that I detected this bird sitting on its eggs, the nest was invariably placed in most inaccessible spots, sometimes on the peak of a lofty drang, surrounded by the sea, always by itself. It is a great robber in the Fuglebergs, and is taxed as a bird of prey.

129. *Larus glaucus*, Brunn. Glaucous Gull. *Native name*, Maasi.—Svabo writes that this bird was unknown in Færoe before 1756, which was a bad year in Iceland. It now arrives late in autumn and disappears in the beginning of February. The *Larus glaucus*, Brunn., of Landt, evidently refers to the herring gull.

130. *Stercorarius catarractes*, Linn. Common Skua. *Native name*, Skuir. — This noble bird, which in fearlessness of man surpasses any other with which I am acquainted, arrives in Færoe about the middle of April and leaves in October. It is much to be regretted that various causes are rapidly tending towards the extinction of the skua in Færoe, and in the course of another ten years this bird will probably be no longer found breeding in those islands.

Svabo, writing in 1782, mentions that it lays its eggs towards the end of May, and has flying young ones about the end of August; in ancient days the island of Skuoe, which probably derived its name from the bird, produced 6000 young ones yearly; in 1782 hardly ten pairs nested on Skuoe. He records them as once numerous on the islands of Vaagoe and Stromoe; they no longer breed there. Svabo, noticing their rapacious habits, and the damage they committed on the Fuglebergs, by destroying both eggs and young, proposed that they should be taxed as a bird of prey, and his recommendation was acted on, two bills of the skua being equivalent to a raven's at the present day.

This tax has greatly reduced their numbers, for the fishermen, when in their haunts, have only to scatter some fish-liver on the water, which at once attracts these birds: they are then shot for the sake of the bill, feathers and flesh, which latter makes excellent fishing bait. The proprietors of the land on which the skuas breed protect it, on account of the estimation in which the young is held for food, but protecting a bird by land which can be so easily destroyed on the sea, is of no avail, and farmers have spoken to me with regret of the diminution on their lands of this fine species.

The breeding-places now occupied by the skua in these islands are—Little Dimon, where two or three pairs nest; Great Dimon, four pairs; on the high ground above the village of Sands, ten pairs; a small colony of two or three pairs nest on the hill of Flatinum, in the island of Sandoe. To meet with them again one has to go to the North Isles; there, on Svinoe, I found some seven pairs nesting on the 7th of June, but owing to the backwardness of the season we only found two eggs, and those in separate nests. In Videroe four or five pairs nest on the hill of Mealingsfiæld, and I received two eggs from there on the 5th of June, also taken from different nests. In Bordoe they also breed, as I have received the eggs from

there, but during my stay in that island it was so foggy I never was able to visit their haunts.

On the 22nd of May we visited the breeding-place of the skuas near Sands, in Sandoe, in company with Sysselmand Winther, who informed me John Wolley visited this place in 1849, and then about forty pairs were nesting; they are now reduced to ten pairs. When we had ascended to the elevated tract where the birds breed, each pair, on our approaching their nest, came sailing around our heads with vigorous and stately flight, suddenly swooping towards us with the rapidity of an arrow shot from the bow; as we neared the nest the circles became smaller, their darts more rapid, and their harsh note of anger louder. When we found the nest and touched the eggs their boldness increased, and they dashed at us, apparently, with every intention of striking, but just at the instant one involuntarily ducked the head to avoid the threatened blow, the bird changed its course, though more than once my head was grazed by the outspread pinions. Here the skuas nested in the moss, which covered many acres between the gray boulder rocks with its green carpeting; the nest, a hole about the size of a soup-plate including the rim, was trodden down to a depth of about four inches, and lined with pieces of moss and a few of the bird's feathers; the birds, however, appear to prepare several nests before they decide on using one.

We found here six nests with two eggs each, the full complement, and one with a single egg. When we had robbed a nest and placed the eggs in a basket, the birds left off dashing at us and alighted together on one of the mossy hillocks near at hand, which are their favourite perching places: these hillocks are covered with their droppings and their castings, which consist of the feathers and small bones of the birds they have devoured; I examined many of them, which were made apparently of kittiwakes' feathers and bones: I do not suppose they can kill an adult kittiwake, but from the constant firing of the inhabitants at this species, there can be no lack of wounded ones about, which fall a prey to the skuas. Before leaving the breeding-place I got permission from the proprietor to shoot a pair: the stomachs of these were full of flesh.

In the south islands of Færoe, as already mentioned, we found the skuas with their full number of eggs laid by the 22nd of May; whilst in the northern isles, on the 7th of June, they had barely begun to lay.

131. *Stercorarius pomarinus*, Temm. Pomatorhine Skua. Müller writes that only two young individuals of this species have fallen under his observation in the Færoe Islands ('Færoernes Fuglefauna,' p. 64).

132. *Stercorarius parasiticus*, Linn. Richardson's Skua. *Native name*, Tjegvi.—This bird arrives about the beginning of April and leaves in October. In the middle of May I noticed them pairing: at this period their flight is still more striking than usual; generally the female is pursued by two, sometimes by three, males. For hours together they remain on wing, indulging in the most varied flights, now sweeping the ocean or fiords, anon rising over the very summit of the hills, then away down the valleys and around the lakes. So rapid is their flight that the "whish" of their wings is startling as they pass you unexpectedly from behind. This elegant bird is most abundant throughout all the islands, but especially so in Vaagoe and Svinoe; though apparently preferring certain spots where many pairs nested in proximity, yet we found their nests scattered over the islands. I have frequently watched them pursuing the arctic terns, but sometimes they did not succeed in making this bird disgorge, for often the mate of the chased tern would come to the rescue, attracting the attention of the predatory gull, so that at length, between the two, the skua became quite baffled, and gave up the pursuit in disgust. This bird is a regular attendant on the fishing-boats when they return from the sea, and comes in for a large share of the fish-offal, which it robs the gulls of, but I remarked as well that it does not disdain to help itself more honestly from the garbage when thrown out on the water. I am inclined to think that the variations in colour of the plumage are entirely dependent on age, and that the birds with most white in the plumage are the oldest.

133. *Stercorarius ceppus*, Brunn. Longtailed Skua. *Native name*, Tjegvi.—Is uncommon. Müller procured one individual in June, 1860, and another in 1863. I did not recognize it, though I looked carefully amongst the preceding species for it.

134. *Fulmarus glacialis*, Linn. Fulmar Petrel. *Native name*, Heavhestur.—Svabo writes that in his day it was only seen by the fishermen far off the coast. Landt mentions that it is seen between the Shetlands and the Færoe Islands, and is known only to those who fish a great way out at sea. I noticed it following the steamer after we got about thirty miles north of the Shetlands, and their

numbers increased as we approached the Færoes, though they left us as we entered the Sound of Naalsøe, apparently not caring for the more settled waters of the fiords. Truly oceanic in their natures, they seem to exult in sailing down the trough of the huge Atlantic billows, and it is most interesting to watch their powers of flight: one steady flap, and then for several minutes they sail along without any apparent vibration of their wings, excepting when they change their course by a see-saw motion of the pinions. It was somewhere about 1839 that a few pairs of fulmars were first discovered breeding at Qualvøe, in Suderøe; now they are abundant there in the breeding-season, and have spread to Great Dimon, Skuøe, Myggenæs, Viderøe and Fugløe, in all of which islands it nests in large numbers. The natives value the young so highly as food that it is difficult to induce them to let one take a few eggs. The fulmar sits close, and does not move from the egg until the fowler is quite close: in many cases there would be no difficulty in capturing the old bird on the egg: this was done for me by a fowler at Myggenæs: the oil which exuded from this bird's bill when captured stained the feathers a delicate salmon hue.

135. *Puffinus anglorum*, Ray. Manx Shearwater. *Native name*, Skraapur. Svabo mentions that these birds arrive on the 25th of March, lay their eggs in the latter end of April, and depart after the middle of August. The droppings of this bird are never seen outside its hole, as in the case of the puffin. It is said that at one time, on the island of Skuøe, several thousand young ones were taken yearly, but the birds wandered to Lujraberg, on the west side of Sandøe, and after some years to Trolldhøved. At present the shearwater breeds in considerable numbers at Trolldhøved, Kolterøe, Kalbak, Sorvaag, Viderøe, and several other places. At Viderøe, on the 8th of June, we were taken to one of the breeding-places of this bird: the burrows were situated in a steep grassy hill-side, about three hundred feet above the sea. The exact position of the nests was recognizable by the patch of discoloured turf that had been replaced in prior seasons over the hole by which the young one had been removed: our conductor raised one of these sods, scraped away the peaty soil below, and, removing a clod of peat, exposed a shearwater sitting on its egg. I took both the bird and egg; the former proved to be a male. The egg was deposited on a few blades of withered grass. I only examined this one burrow, as the islanders are extremely averse to disturbing

these birds, the young being considered the choicest dainty amongst all sea-fowl.

136. *Puffinus major*, Faber. Great Shearwater. Müller records that it is sometimes seen by the fishermen out at sea during the winter, but that it does not nest in the islands.

137. *Procellaria Leachii*, Temm. Forktailed Petrel.—Is seen at sea near to the islands in summer, but it is not known to breed in Færoe.

138. *Procellaria pelagica*, Linn. Stormy Petrel. *Native name*, Drunquiti. The principal breeding-stations of this bird are the northern island of Fugloe, and Naalsøe, near to Thorshavn. We visited this latter island on the evening of the 21st of June. The storm petrels nest on the north-east side of Naalsøe, under masses of rock and *débris* that have fallen down from the hill above: on every side of us we could hear them making a noise in their holes, the note a deep guttural "Urr—rr—rr—croak—croak—croak," continuously repeated. After considerable labour, and lifting up many stones, and heaving some rocks down the hill, we succeeded in getting one petrel, a male, and, from the same hole, one egg which was broken in the getting out.

H. W. FEILDEN.

Woolwich.

Bird-Friends of the Farmer. By HENRY REEKS, Esq., F.L.S.

KNOWING the interest you take in Economic Zoology, and especially that portion relating to animals whose existence and preservation are decidedly beneficial to mankind, I herewith send you a list of *inland* birds, which, after considerable observation, and a life hitherto spent in farming operations, I can safely recommend as being serviceable to both the farmer and horticulturist.

In jotting down the following names I have placed them pretty much in the order of merit in which they stand in relation to man.

Rook.—In all light soils, where "wire-worms" (larvæ of the genus *Elatér*) abound, also those of the *Tipulæ* and *Noctuæ*, it would be almost impossible to grow crops of corn or roots without the friendly assistance of the rook. In this immediate neighbourhood, where the soil is cold, strong and heavy, and consequently very free from wire-worms, rooks and rookeries are comparatively scarce, but from my farm at Thruxton, where the soil is light and

chalky, I can stand and see seven large rookeries within a radius of three miles. Now, for at least nine months in the year, these hosts of rooks are purely insectivorous; and they may be easily compelled to be so for the remaining three months. When the autumn and spring corn is being sowed, and until after the spire or blade is well out of ground, it is absolutely necessary in large fields to employ a man with a gun, and also when the corn is in sheaf, but not so when it is ripening; then a very simple device will keep them off much more effectually than any gun, unless always present. I buy a pound of good strong crochet-cotton, which costs, I think, about four shillings: this is wound off into balls rather larger than a cricket-ball. I cut then a number of sticks about half-an-inch in diameter and two feet long: these are stuck in the ground by the side of the corn, and about fifteen yards apart. I then run down by this row of sticks, paying the cotton out as I go, and tying it with a double knot at each stick, and about a foot from the ground. No rooks will ever pull ears of corn over or under this barrier. To string a hundred and fifty acres of corn round in this manner is only a summer's evening amusement for two persons—one to carry and stick in the sticks, and the other to follow and fasten on the cotton. Where this, or the gun, has been neglected, I have known a large flock of rooks to carry away and spoil five pounds' worth of corn in a single day! By adopting the simple means I advise, rooks are driven to search behind the ploughs and in pastures for their favourite and legitimate food. Although perhaps the most useful of British birds, it was quite right not to include it in the schedule of "wild birds" for protection: we could scarcely have done away with our social meeting once a year for rook-shooting, or the cold rook-pie as an after luxury. I have never known a rookery decrease where the young rooks have been annually shot at, provided the birds are not persecuted more than *one* evening.

Starling.—A dear lover of ripe cherries, but of the utmost service in ridding pastures of the larvæ of *Tipulæ*; also sheep of ticks.

Owls.—Of these most useful birds I need say nothing beyond the fact that a pair of white owls with young will supply their nestlings with not less than *fifty* mice every night, and as they have a succession of broods during the summer it is almost impossible to estimate the benefit farmers derive from them.

Kestrel.—Another great destroyer of field-mice, and consequently a true farmer's friend.

Peewit.—Almost entirely insectivorous, feeding chiefly on worms and larvæ which are near the surface of the land, such as those of *Noctua Segetum*, *N. exclamationis*, &c. It is also amusing to watch them through a telescope running and picking up imagoes of *Coleoptera* and other insects.

Brown Linnet.—During the summer insectivorous, but no less serviceable during the autumn and winter months. On light chalky soils, where those pernicious weeds charlock and wild mustard abound, and have shed their seeds among standing corn, flocks of brown linnets may daily be seen among the stubbles, ridding the ground of seeds, which, be it remembered, will lie in the ground many years without vegetating—in fact, when deeply buried by the plough, only waiting to be again turned up sufficiently near the surface to receive the vivifying influence of sun and air.

Wagtails.—In some counties called “dish-washers.” Food almost entirely confined to insects, and the larvæ of small dipterons—to wit, those of the genus *Culex*, to which the true mosquito belongs: the latter, *Culex pipiens*,—and probably allied species,—has been abundant the latter part of this summer, and, in fact, is so now (September 18th). The swarms of insects which attacked the reapers, I think in Kent (*vide* daily papers), were, in all probability, swarms of winged ants, Hymenopterous insects of the genus *Formica*, which sting. Mosquitoes have not this power, but raise a most irritating bump by inserting the point of the proboscis in the skin and sucking up the blood: the operation is performed only by the females.

Goldfinch.—Feeds on small seeds: large flocks may often be seen on the heads of thistles that have been allowed to go to seed.

Chaffinch, Brambling, Lesser Redpoll and Siskin.—Chiefly on small seeds of pernicious weeds; the first two especially on the seeds of charlock, wild mustard, and different species of *Veronica* that occur in cultivated land.

Pipits.—Insectivorous.

Song Thrush and Redwing.—Two most useful birds, living almost entirely on snails. Redwings also open the excrescences on the bulbs of turnips, and extract the small white maggot which

they contain, and which, I believe, is named and figured by Curtis in his 'Farm Insects.'

Stone Curlew, Golden Plover and Common Curlew.—All most useful in keeping in check insect-pests.

Partridge, Quail and Landrail.—Chiefly preserved for their direct value as an article of food, but really more valuable to the farmer by devouring large quantities of "grubs" (larvæ of Noctuæ), as well as larvæ and imagos of other injurious insects.

Nightjar, Cuckoo and Spotted Flycatcher.—The latter has rather a *penchant* for ripe red currants; otherwise all three, as far as my experience tells me, are purely insectivorous. I certainly do not believe that the cuckoo sucks the eggs of any small birds. When shot with an egg in its mouth it has certainly its own egg there, and ready to be deposited in some nest at a fitting opportunity.

Woodpeckers and Nuthatch.—Destroy the larvæ of Sirex and other wood-boring insects. The nuthatch, at this season, is very fond of hazel-nuts, which it securely places in crevices of the bark of oak trees, &c., and then dexterously splits them with its sharp-pointed bill. Where the birds are abundant, as they are in this neighbourhood, it is amusing to watch them first fix their nut firmly in a slit of the bark, and then hammer away at it, and so intent are they with their hard work that one may walk almost close to them without disturbing them.

Hedgesparrow and Robin.—The former is a most industrious and useful little bird, picking up tiny insects and tinier seeds. The robin is also useful in this way, but very fond of ripe currants.

Creeper, Wren, Goldcrest, Longtailed Tit, Cole Tit and Marsh Tit.—All more or less useful in preying on minute, and perhaps otherwise indestructible, insect-pests. I am inclined to add the blue and great tits to this list. Although in ordinary seasons I grow ten or twelve bushels of filberts for private use, and have examined scores of bunches that have been bored by tits, I invariably found, by the portion of kernel left in the shell, that each nut had contained a larva of the mischievous nut-weevil or some other insect. The blue and great tits are most mischievous to ripe apples, but, if kept from these, they are almost entirely insectivorous, yet in the winter they will eat bread-crumbs and small seeds.

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Wheatear, Whinchat and Stonechat.—Feed almost entirely on insects: the first-named may often be seen sitting on the ears of wheat when in “shock,” from which, like the spotted flycatcher, it pursues and captures a passing insect, returning generally to the same “shock” of wheat. The stonechat during the winter and spring months often frequents sheep-folds, where the combined warmth of some hundreds of sheep probably induces some insects to creep forth to the surface of the land, which but for that would remain hidden in a semi-torpid state.

In the above list I have not thought it necessary to mention a host of our summer migrants, almost the whole of which are entirely insectivorous, although the greater whitethroat, blackcap and garden warbler are remarkably good at ripe currants, and certainly have no objection to cherries.

With regard to the “Schedule” of wild birds (Zool. S. S. 3232), why the hawfinch—a most mischievous bird in gardens—has been included, and the golden oriole—at least a very ornamental bird, that would breed here if protected, and adorn our woods and shrubberies—has been excluded, appears to me to be an oversight; but I should fancy that the Schedule, as now worded, could never have been submitted to any practical ornithologist. What schoolboy does not know that lapwing and peewit are synonymous? also dunlin and ox-bird?

HENRY REEKS.

East Woodhay, September 18, 1872.

Concerning Squirrels, Rats, Kestrels, Sparrowhawks, &c.

By JOHN SCLATER.

ON the 3rd of July I was taken to the nest of a song thrush, which contained two young birds and an addled egg: both birds were without the upper mandible; one had the under mandible entire, the lower had been removed in a jagged oblique direction: the point of the tongue in the first mentioned was taken off; in the latter it was damaged, but not shortened: there was also a large formation on the scapula of this bird. The boy who took me to the nest told me they were in this state when he first found the nest (shortly after they were hatched), and as I could not satisfy myself whether it was a cancerous formation, or that they had been attacked by some “vermin,” I resolved to bring them home and keep them to

determine it. After keeping them a week the incrustations dropped off the several parts, which were quite healed, making it clear the latter supposition was the right one; the question then arose what species of "vermin," and how happened they not to carry off their prey? The nest was placed on some sprouts on the side of an elm, sixteen inches from the ground (to the top of the nest), making it easily accessible; but stoats, weasels or rats would hardly be content with the beak for a repast, nor do I think either would be likely to be driven off by the parent birds. By-the-way I may here mention an instance of a stoat being driven from the nest of a wood pigeon, as recorded by me in the 'Field' of March 3rd: it is the only instance I have heard of a stoat being up a tree, and I have only once seen a rat climb a tree. A short time since I saw from my window a rat run about five feet up the bole of a holly: it descended by dropping from one branch to another, only using its fore feet, holding by one and looking down past its shoulder for the next branch, which it caught by the other, the hind legs dangling parallel to the tail: this all seemed to be done in frolic. I have however, come to the conclusion that the injuries done to the thrushes was the act of some evil-disposed squirrel: the trees near where the nest was found are much frequented by them: they are very numerous here now, though about ten years ago there was not one to be seen; they are sometimes threatened with destruction for injury done to the trees. I have watched them tearing the bark from the smaller limbs of the beech: they first cut it across and then draw it backwards in long narrow strips, which they make still more narrow and wind into loose balls, the motion of their feet being similar to a person winding a ball of yarn: it is at last cut off the branch and carried off to line their nests. I once shot one in the act: it fell to the ground, but, before I could get to it, it leaped to the bole of the tree, and was nearly out of reach when I caught it by the "brush," which it left in my hand and went on with its naked tail: I would have left it so, but I thought it might go in agony from the effects of the shot, so I put an end to it by a second shot.

Since writing the above I have read the "Anecdote of a Rat," recorded by Mr. Gurney (Zool. S. S. 3181), and as my own observations may help to explain what were the intentions of the rat at liberty, had it succeeded in making its way to the one in the trap, perhaps you will allow me to add them to my already long and

rambling letter. Rats are always numerous at this place, but it sometimes happens that their numbers are enormously increased, and all at once, as if they had arrived by an excursion train. Two years ago a large number paid a visit to an old brewhouse, now used principally for washing dairy utensils, &c. In the same yard an unused henhouse had been converted by me into different cages, in which I had a pair of longeared owls, three sparrow-hawks and a pair of kestrels: the mention of these two latter species brings to my mind anecdotes relating to them, which by your permission I will add to this paper. Finding it rather difficult to cater for so many gluttons I resolved to set about trapping the rats, which I gave to the birds after slitting them down from head to tail: a portion of the yard in front of the cages was paled closely with high larches: I made these rat-proof at the bottom only, leaving three holes in different parts of it. I thought the inquisitive nature of the rat would be certain to lead them through these holes, especially as I sometimes strewed about portions of rabbit's liver, &c. I used two common rabbit-traps, just set down bare on the inside of the paling, and shifted them every morning, so that there was always one hole without a trap, but never the same one. I succeeded by this method far beyond my expectation, as I seldom failed to have a rat in each trap (or rather as it often happened, a portion of one) every morning. They were frequently almost entirely eaten, the legs fast in the trap sometimes without a particle of flesh left on them, the skin often inside-out and more or less drawn over the head: the cannibal habits of the rat were not unknown to me, but I would not blame them for this until I witnessed it, and after watching for some time I almost gave it up, having entirely failed, as it was during the night that this performance seemed to take place. But being in a shoe-house in the same yard one morning I heard the "click" of a trap, followed by the loud screaming of a rat: in an instant four or five large rats bolted out of the brewhouse, and passing through the hole set upon the poor fellow (a full-grown male) in the trap; during the worry they all seemed to be screaming together: it reminded me of the *melée* so often witnessed amongst sparrows. I stepped into the yard to get a better view of them, but they, seeing me, immediately ran off. I went to the trap and found the poor unfortunate almost dead, only gasping a few times, bleeding from the mouth and bitten all over. I was perfectly satisfied, although I did not

see the eating part, and took the rat out of the trap and gave it to the birds.

A day or two afterwards one of the watchers brought me two weasels he had trapped; I left them lying on the shoe-house table, but in the morning they were missing; I made enquiries about them, but no one had touched them. I then suspected the rats had demolished them, and asked the watcher to bring me another weasel if he could: he did so, and I put it into a rabbit-trap, leaving it on the same table, without ever thinking of fastening the trap, but judge my surprise when both weasel and trap were gone. I sought for them for some time, and at length found them. I saw the pin and part of the chain attached to the trap below a water-barrel which stood over one of their holes: the weasel was drawn down the hole, but the trap was too large for it; there had been no attempt to eat the weasel. I send you the skin of a mouse taken from one of their haunts, just as it was found: on showing it to a practical naturalist, he exclaimed, "Why, you've skinned it yourself and are trying to make game of me!" I may add that I have trapped more rats by placing traps as stated above, without any bait or covering, than by any other method I ever tried. I object to poisoning as they die in their holes, and cause a great nuisance from the smell that comes from them; it is also a delusion to consider them poisoned when all the phosphoric paste, &c., has disappeared: I have frequently found it stowed away in large quantities in holes covered up, without the bread it was spread upon even being touched. Another plan I have tried with success is as follows: in a room where old lumber was kept, and used also for keeping bran, &c., I stopped all the holes but one, and having got a slate with a hole at one end I put a long cord to it, and placed a piece of wood against the wall on each side of the hole the width of the slate, the pieces of wood ribbed loosely to keep the slate in its place after falling; the cord passed over a pulley at the top of the room above the hole and was carried through a window and fastened outside. I allowed it to remain for a few nights set, so as to accustom them to the alterations. I then went out quietly, and with a knife quickly cut the string, and down went the slate. I then armed myself with a short stick and a lantern, got in quickly and commenced the massacre: I killed eleven in a very short time, but as they got thinner I had more difficulty on account of the lumber; an old winnowing-machine they soon found

was excellent protection for them: I killed four more, and there were four or five more left; however, fifteen was not a bad haul for the first time. One of them, after being struck at several times, I drove into a corner, when all at once he commenced screaming and boldly sprang at me, seizing me just above the knee, my trousers telling me I was fortunate not to be dressed in highland costume: this gallant defence, however, cost the poor fellow his life; his length from head to tail end was nineteen inches and seven-eighths. A good terrier makes it more easy and effective.

I do not know any animal so destructive in their habits as rats are. An outhouse here was considered to be more convenient without the door, which was accordingly taken off, the frames only being left: they set to work and presently ate away the lower part of the frame; there was no obstruction in this case, the place being entirely open to them; their business seemed to be to get the place to fall down.

Having thus accused them I may add the following in their favour: some years ago they made their way into a cellar which contained several tons of potatoes, amongst which were a great many diseased ones; the rats were said to be causing great havoc amongst them, and I went to look at them from time to time. I found out that they preferred the diseased to the sound by placing some that were partly sound on a shelf, low enough for them to get at, and I found the diseased parts eaten off, the sound parts left. I mentioned this circumstance, but was only laughed at, with the remark, "Who ever heard of a rat doing any good?" However, I resolved to prove it the first opportunity I had, and last year (as in this so far as disease goes) was but too favourable for it: the potatoes were placed in separate cellars, the rats having access to one and not to the other; I soon found the potatoes were much eaten by the rats as before, but those in the other cellar began to rot and smell dreadfully. I asked the farm-bailiff to have them turned over and the bad taken out: as soon as he saw them he said, "I see your statement is correct, and I think we had better let the rats at them."

I will now give you the anecdote referred to above. On the 29th of June, 1870, I put four young swallows, nearly fledged, into a cage, as food for three young sparrowhawks, the age of which may be understood by their tail-feathers being about an inch and a half long. I left the swallows alive on a shelf by the side of the

hawks, thinking they would kill and eat them, but on going to them next morning I was surprised to find the swallows all alive and nestling under the hawks: I took one of them, and after killing it tore it up, giving a portion to each of the hawks: just then my attention was drawn to a pair of old swallows by the noise they made overhead; it directly struck me that the little prisoners were their offspring. I retired a short distance under an archway, when I saw immediately afterwards the old birds go through the wires (it was wire netting commonly used for rabbits) and feed their young below the hawks: this they did several times before I left off watching them. I of course left the happy family as they were, and sought other food for the hawks, the swallows continuing to feed their young until the 3rd of July, when I saw them flying inside the cage; I let them out, to the great joy of their parents. Poor things! what strength of affection was here shown by them. It was very curious to see the birds all nestled together, each hawk with a swallow stuck in head-foremost between its legs. This circumstance was mentioned to an eminent naturalist, who said he was quite at a loss to make out why the hawks did not kill them, unless it was that they did not care to taste the flesh of a bird they would never be able to catch. I tried them by putting a swallow into the cage in the September following: the male bird killed it immediately. I may add my reasons for keeping these birds in confinement: it was partly to witness the change in their plumage, but more especially to find out whether, as stated by Selby, the female would kill and eat the male. I had two females and one male; I let one of the females out in October. I never saw anything but a skirmish between them, and then only when I fed them: the male was generally the first to get hold of what was given; he was by far the quickest and wildest of the two, and never got the least tame. I hungered them purposely sometimes, to see whether she would attack him, but she never did, and after satisfying myself I let them go.

The kestrels mentioned were taken in June, 1869. I had climbed up a rock to the nest and was standing on a ledge examining one of the young birds (it contained three, an addled egg and a mouse), when all at once the rock gave way, and I with it; I fell about five feet straight and had a rough slide of about ten feet more, landing in the water, with the rock by my side and the bird in my hand. The poor bird was not fit to take, but I did not care to

return to the nest with it, so brought it home; it was covered with white down, no feathers visible. I put it into a cage on the table, and sat down to take off my wet and tattered clothes: I was directly assailed by a shower of something like lime and water from the little fellow; the distance from the cage was two and a half yards. I pinned a newspaper round the cage, but all to no purpose; the trajectory to clear the paper was at once obtained, so I tried another plan: I made a porthole in the side, the use of which was quickly understood; I then placed a target against the wall, and had no more trouble on the point. I took the bird about 11 A.M., and at 10 P.M. it had consumed seven newly-hatched blackbirds, besides worms; it turned out to be a female, and became remarkably tame. I kept it nearly two years, and then turned it out, but it would not go away: it scarcely ever left the yard; its favourite perch was a large stone in the yard, and it went to roost in some of the outhouses at night, perching upon an old box or anything of that sort: it was at last killed by the yard-dog, having got too near his trough when he was feeding. This bird was also caged with a male for some months; they agreed well together, only, like the sparrowhawks, when a mouse or bird was put into their cage there was always a tussle for it; each would lay hold with one foot, and standing on the other, with wings spread and screaming, pull away in opposite directions, until some part gave way, or one of them, generally the male, gave in.

JOHN SCLATER.

Castle Eden Castle, September 3, 1872.

Otter.—The largest otter I have ever seen was killed a short time ago on the banks of the river here, by a large dog of the Newfoundland breed. The person who saw the capture, and to whom the dog belonged, says that the fight between it and the otter was something terrible, and lasted for a considerable time both in and out of the water. Judging from the mangled and lacerated appearance of the head, neck, and throat of the otter, as well as from a few deep scars on the corresponding parts of the dog, the man's description was not far wrong.—*G. B. Corbin; Ringwood.*

Are the Channel Islands British?—I regret that you should give even a qualified approval of the proposal for including the productions of the Channel Islands in the British fauna (Zool. S. S. 3184). I am unable to

see that any useful end would be served thereby, and the revolutionizing of our lists would be a real inconvenience, which I think we ought not to be called upon to undergo without good cause being shown. If the productions of Guernsey and Jersey are to be added to our lists because these islands are British possessions, we must also admit the productions of Gibraltar, Malta, and Heligoland. It would not be difficult to show that Heligoland has a better claim to be considered British than the Channel Islands; the sea which separates it from England is everywhere shallow, a very slight elevation of its bed would lay dry the greater part of the German Ocean, and there can be no doubt that long after the formation of the English Channel there was a land communication with the continent across the space where the German Ocean now rolls, of which the speck called Heligoland is the last remnant. Although with few, and those mostly doubtful, exceptions, all the animals and plants of the British Islands are identical with continental species; still the sea is a definite boundary, and species which have been subjected for long periods to insular conditions have in many cases acquired peculiarities which mark them as strictly British; for instance, amongst the Lepidoptera, *Agrotis Ashworthii* appears to be the English form of *Agrotis candelisequa*; *Agrotis lunigera* of *Agrotis Trux*; *Hadena assimilis* of *Crymodes Exulis*; *Acronycta Myricæ* of *Acronycta Euphorbiæ*. Now the insects of the Channel Islands do not exhibit British peculiarities; they do not vary from the form of the same species in Normandy and other parts of France, and have no connection with British insects, except as being also members of the European fauna; but should Mr. Cambridge's "simple solution" be adopted, unless I greatly underrate the energy and intelligence of our collectors and dealers, so prolific would the Channel Islands be found (in Lepidoptera at all events) that I should not be surprised if the whole European fauna, of some six thousand species, found its way through the side-door it is proposed to open. Our list would then resemble a comet, the insects of Great Britain and Ireland representing the nucleus, those of the Channel Islands its portentous tail! While saying this I am an earnest advocate for English entomologists extending their field of study, and endeavouring to put to some scientific use the vast collections of British insects, which exist apparently to so little purpose, and I believe the first step to be the obtaining some acquaintance with the general European fauna and the relation which our native species bear to it. The British islands do not by themselves form a zoological or botanical province: to treat them as such is an arbitrary arrangement for the convenience of collectors, and to make a collection of the insects found in them, and then to stop, although certainly an intelligible object—a sort of census of the hexapod population—appears to me to be a very incomplete affair, and to my mind it does not seem any more possible to study British insects in a satisfactory manner, apart from their

connection with continental forms, than it is to study the British nation whilst ignorant of its origin and the successive waves of Roman, Saxon, and Norman conquerors which have made it what it is. The origin of our native insects is no doubt a very wide and difficult question, and I do not wish at the present moment to enter further upon it than to indicate a few of the interesting questions which await solution at the hands of English entomologists if they wish to enlarge their field of study in a manner likely to result in additions to the stock of human knowledge, which a mere extension of our lists will not do. It is clear that our native species have been derived from very different sources, at widely different periods, some of them of a vast antiquity. 1st. We have insects probably derived from Western France and Northern Spain. 2nd. Our mountains present us with a distinctly Scandinavian and Arctic fauna. 3rd. Another well-defined group of species is found exclusively in the chalk district of South-Eastern England. 4th. The great bulk of the insects of the British Islands are identical with those of Northern and Central Europe, and have undoubtedly migrated thence, mixing with, overspreading and dispossessing the more ancient settlers. To discriminate between these various faunas, to trace each species to its starting-point, seems to me a subject worthy of more attention than it has received, and our Lepidoptera especially have been so diligently collected that our knowledge of them may practically be considered complete, or at all events sufficiently so to enable us to form definite conclusions of no small scientific value; for small and insignificant in the scale of creation as insects may appear, yet their vast numbers and universal distribution enable them to survive changes which have been fatal to larger animals less numerous in individuals, and in their fragility to outlast even the everlasting hills, and throw light on long past conditions of the earth, and altered distributions of land and sea.—*Edwin Birchall; Kirkstall Grove, Leeds, September 6, 1872.*

Birds observed at Aldeburgh, Suffolk, in the Summer of 1872.—July 26th.—Mr. Hele showed me to-day a splendid longtailed drake, in almost complete summer dress, which had been brought to him on the 24th. With the exception of the scapulars, the summer plumage was perfect. I believe very few specimens of this bird have been obtained in Great Britain in the summer months. 29th.—Walked round the meres: saw a great number of terns, both of the common and lesser species; a small flock of dunlins in summer plumage; and five snipe. An adult male ruff, just assuming his winter dress, and still showing the remains of a white frill, was shot in the mere this evening. There are now a good many ducks and teal about, and almost every evening, at flighting time, some of the latter fall victims. 31st.—Two stone curlews and a shorteared owl were shot last night. August 1st.—I had two young male garganeys brought me to-day, which were killed in the river last evening. 8th.—Mr.

Hele shot a fine adult oystercatcher in the mere to-day, and in the evening a young male garganey. 15th.—One of the gunners shot three immature shovellers out of a party of six. These birds, as well as the garganeys and teal, are, I believe, bred in Norfolk. 17th.—I had two turnstones brought me to-day, one an adult male, the other immature. 18th.—Saw several greenshanks. 22nd.—A friend who was shooting with me to-day killed a sanderling, a bird of the year. 24th.—To-day I was offered two young shovellers and a knot. 29th.—Shot a greenshank and two immature ruffs. The latter are now by no means uncommon in the marshes, and are easily recognized by their flight, which much more resembles the easy, gliding movements of a tern than the rapid flight of the generality of waders. September 6th.—Saw the first flock of knots, all apparently young birds. 7th.—Shot a greenshank, and saw several more. The peculiar shrill whistle of this bird can be heard at an immense distance. 9th.—Shot a curlew sandpiper from a flock of five. All the terns have left us by this time. 14th.—To-day I was lucky enough to shoot a pectoral sandpiper in the North Mere. Three birds skimmed past me within a longish shot, and I shot at them and killed this one, thinking that they were curlew sandpipers. It is evidently a bird of the year, from the light-coloured margins to the feathers; the sex I could not ascertain with certainty, owing to the shot-marks. The legs and base of lower mandible were light yellowish brown, and irides dark brown; the body was loaded with fat. The wind had been blowing rather freely from the West for some days, and I fancy that this bird must have been blown over to the coast of Norway or Iceland, and then have joined a flock of knots or curlew sandpipers on their way southward. This is the second recorded occurrence of the pectoral sandpiper in Suffolk (Mr. Hele has one, which he shot in the same place, Oct. 1870); but I have no doubt that it is a species often overlooked, and that, if all the so-called "ox-birds" which are killed on the Norfolk and Suffolk coast could be examined, very few years would pass without one or two being met with. 16th.—I put up two little stints to-day, and shot one of them. I saw a solitary shell-duck in the mere, but could not get a shot at him. I think, considering the first-rate condition of the meres from the wet weather, we have not had so many waders as usual. I have not been able to meet with the wood sandpiper at all, though I have looked for it most carefully. The curlew sandpiper, knot, turnstone, little stint, and bartailed godwit have only appeared very sparingly. Curlews and whimbrel are tolerably abundant on the river. Green sandpipers are generally to be seen about the ditches, and, as before mentioned, duck, teal, &c., have been rather plentiful.—*J. G. Tuck; Tostock House, Bury St. Edmunds, Suffolk, September 21, 1872.*

Ornithological Notes from the Neighbourhood of Southwold, Suffolk.—

Heron.—August 5th. I procured a young bird up the river to-day, and

observed several more. They are decidedly more numerous here and tamer than usual this year: perhaps the absence of guns during the last four months has given them confidence. 19th. About 6 A.M. I observed fifteen birds, all fishing from a mud bank at low water; these birds, when disturbed, all flew to Lord Stradbroke's heronry at Henham.

Curlew.—Birds of the year appear to keep together in large flocks, and to frequent the meadows and pasture-lands more than the mud-flats; old birds are generally to be met with about the latter locality. We procured six out of the same flock at different dates this month, all young birds, but differing vastly as regards size, some having beaks quite three inches longer than others: I suspect this represents the difference of sex.

Dunlin Sandpiper.—August 10th. To-day we procured sixteen at Thorpemere, chiefly young birds. This species has been extremely scarce at Southwold this month: where last year in a week I noticed some hundreds, this year I have not seen more than two dozen.

Greenshank.—August 12th. Observed five up the river. 23rd. Two more seen, extremely wary: their note is very similar to a redshank's.

Reeve.—August 15th. I procured a very good specimen to-day, standing in a pool of water at the back of the beach near Dunwick—a bird of the year.

Sanderling.—August 15th. Procured five, all in winter plumage. 27th. Obtained four more: these birds and dunlins also appear tamer in windy weather. I do not remember ever having seen sanderlings here in former years.

Wild Goose.—August 22nd. A friend to-day observed some geese flying south-east, very high.

Wild Duck.—August 24th. An old female I shot to-day weighed two pounds and three-quarters.

Goosander.—August 19th. Observed a pair of either these birds or mergansers on the mud-flats up the river, about six o'clock this morning.

Arctic Tern.—August 9th. Visiting Orford to-day I found these birds very numerous on the shingle about the High Light, near the Ness. They had evidently been breeding here, as I procured a young bird not out of its downy state; beak, $\frac{7}{8}$ inch; tarsus, $\frac{3}{4}$ inch: also a mature bird, curiously enough with only one foot; it had lost the other one just above the web; it had possibly been shot, or bitten off by some fish while pursuing its daily avocations; the bone was entirely healed over.

Dusky Redshank.—September 7th. My brother obtained two birds of the year to-day at one shot: he observed them fly up the river and alight on the mud-flats, and he secured them from behind the wall without difficulty: they were tamer than common redshanks usually are.

Coots.—September 13th. This evening, about dusk, my brother, while waiting for ducks, observed ten coots swimming on the sea, a short distance from land. They were near a broad much frequented by wild-fowl, and the

sea was very smooth at the time.—*Henry Durnford; 1, Stanley Road, Waterloo, Liverpool.*

Golden Eagle in the Isle of Wight.—A full-grown but immature bird of this rare species was shot on the 21st of September, at Bowcome, in the parish of Carisbrooke, by Mr. Joseph Jolliffe, who, with two others, went in search of it at an early hour, it having been observed in that neighbourhood and at Gatcombe for some days. After a long search through the different woods and copses, it was observed sitting on a branch of an isolated tree on the skirts of the cover, and on being disturbed flew into a clump of trees not far off, and when followed up again took wing, but soon alighted on a tree in or near the cover, where it was stalked or stealthily approached by Mr. Jolliffe, shot at and slightly wounded as it rose on wing, having dropped one leg: it flew towards the downs, where it alighted and was captured, but not without some show of resistance. An attempt was made to kill it, and it was seemingly dead, but revived, so tenacious of life are birds of prey; for instance, when in Canada, I had great difficulty in killing a wounded greathorned owl, though my whole strength and weight were brought to bear on it. On being skinned by Mr. Smith, the Newport taxidermist (to whom I am indebted for the above particulars, and for having been allowed a close inspection and to take measurements), it was found to have received one shot in the leg and another in the side, penetrating to the keel; no other wounds were observed, but I am inclined to think more shots must have taken effect, though overlooked, as it is not likely that a wild eagle, with a mere flesh wound and wings untouched, would allow itself to be thus captured. Mr. Smith took it to be a male bird, but what he described did not satisfy or convince me of it; besides, though immature, it exceeds the adult male in size, and is somewhat larger than an adult female mentioned by Macgillivray. I must now give some description, though but a partial, not to say imperfect, one, seeing that the notes and measurements were taken during the hour or two I was at Mr. Smith's. Head of a dark reddish brown—the feathers have a central streak of black, and there is some white about them; nape light brown, with a yellowish tinge—these feathers have also a narrow longitudinal line of black; back of the neck light brown—feathers margined and tipped with yellowish brown, and are lanceolate in shape; upper part of back dark reddish brown, the lower lighter brown, and the feathers have much white about them, and there is more or less of this throughout the plumage, particularly on the neck and breast, giving the bird a mottled appearance; under parts dark reddish brown. Primaries black for a considerable part of their length, the rest of the feathers white and reddish white, shafts black, coverts of a light brown and white, tinged with reddish; wing at flexure of a glossy light reddish brown, mottled with gray, and measures from that joint to the end of quills about twenty-three inches. Tail thirteen inches

in length, the feathers white for the greater part of their length, but shaded, blotched and partially barred with grayish and reddish brown on the exterior webs, and on the inner towards the end of the feathers, which are of a grayish black for a space of about three inches, and the central feathers are nearly three inches wide; none of the *ten* are perfect (there are two missing); coverts long, and much like the quills, being of a reddish brown towards the ends. There is beneath the outer plumage a thick bed of soft pure white down, which, cropping out here and there, is very remarkable. Bewick's "ringtailed eagle" would be an exact picture of this bird if it had but a little more white on the under parts and a little less on the tail-feathers; the figure is perfect, and might be taken for a photograph of this bird had the tail been somewhat rounded, instead of even. Length thirty-eight inches; extent of wings eighty-eight inches, but at least two inches more should be allowed for the abrasion of the primary shafts. The stomach contained nothing but the claw of a partridge and a single feather. Weight over ten pounds. Though this eagle is supposed to have been a wild one, I have my doubts, and will state them:—*first*, its tameness and unwariness, though fasting, in allowing three men with guns so near an approach before taking wing, and this, too, more than once (according to my informant, who had the particulars from Mr. Jolliffe), and when but slightly wounded allowing itself to be readily captured; *secondly*, nothing being found in the stomach but the claw and feather of a partridge, which may have belonged to a wounded or dead bird; *thirdly*, the total loss of one of the toes, long since healed, looks as if the bird had been trapped; *fourthly*, the abraded primary shafts and ragged webs, and the imperfect and disordered state of the plumage,—not, I think, to be accounted for by the bird being in a state of moult,—besides I am informed that none of the feathers were loose; *fifthly*, its light weight, though well nigh, if not quite, full grown. Though an immature bird, it is of full average size; in fact, larger, according to Mr. Morris, who gives thirty-six inches as the length of the adult female, and says that "the iris is yellowish or pale orange-brown," and that the "adult plumage is not assumed until the third or fourth year;" whereas Temminck says, "C'est à la troisième année que le jeune se revêt du plumage de l'adulte," and that "les femelles ont jusqu'à 3 pieds 6 pouces," and the "iris toujours brun." Yarrell, who gives but a short, not to say indifferent, description of the golden eagle, omits the size of the female, but tells us that the adult male is *under* three feet, though Temminck (who I have great faith in) says it is three inches *over* three feet. Yarrell says that the irides are hazel. According to Macgillivray the female is thirty-seven inches long and eighty-seven inches in extent of wings—less by an inch or two than this bird, still in its transition or "ringtail" state of plumage, though not far from maturity, being probably in its third year. Willughby says that it breeds

in the ringtailed state. Montagu, that it is forty-two inches by ninety-six inches in breadth, and has the irides hazel. The ringtail, he says, is rather darker than the golden eagle (*i. e.* the adult), but Temminck tells us just the reverse, saying that “*Les jeunes d'un et de deux ans, se distinguent facilement des vieux; tout le plumage d'un brun ferrugineux ou roussâtre, assez clair et uniforme sur toutes les parties du corps,*” and that the tail “*est très arrondie;*” whereas Macgillivray says that the “tail is nearly straight,”—a mistake, and a strange one, too, to be made by one of our best ornithologists, not excepting Montagu. I say nothing of others, as they are, for the most part, mere bookworms, compilers, or closet naturalists, and know no more of the habits of birds than did that most amusing and entertaining writer, Buffon. It is recorded in the various histories of the Isle of Wight—on what authority I never heard—that a golden eagle was wounded and captured at Appuldurcombe, two miles from this place, “about the year 1828.” I heard of one being seen on the wing at Shanklin, but it has been referred to in my “Notes.”—*Henry Hadfield; High Cliff, Ventnor, Isle of Wight, October 23, 1872.*

Ring Ouzel in Devon.—I have to-day seen some ring ouzels, and fancy the date (October 22nd) somewhat late for them to be still lingering in England. As one of them flew from bush to bush it was chased sportively by a fieldfare, and it was singular to see the two birds together, as they seemed to be types respectively of summer and winter.—*Murray A. Mathew; Gidleigh Park, Chagford, Devon, October 22, 1872.*

Is the Wheatear commoner than usual this season?—I have more than once remarked to my friend the Rev. H. M. Wilkinson, that the above bird is usually very rare in the immediate vicinity of Ringwood, though when a school-boy I have taken its nest several times from rabbits' burrows not many miles from here. This season, however, I have seen a number of the birds, both old and young, in the meadows and fields quite close to the town, and a friend, writing from Yorkshire last month, speaks of the abundance of this particular species there, from which I concluded they were commoner than usual. If such was the case it is pleasant to know that one at least of our “summer visitors” has overlooked the inhospitable aspect and character which I fear the past summer must have presented to many of the feathered tribes who pay us a “flying visit.” In this neighbourhood the wheatear is called the “white rump” generally, but many rustics know it only by the local name of “horse-match” or “horse-musher,” names in themselves as foolish as they are unmeaning.—*G. B. Corbin; Ringwood.*

Breeding Habits of the Grasshopper Warbler.—On the 20th, 21st and 22nd of June last a friend of mine found, in a field of Italian rye-grass, four nests of the grasshopper warbler, and as it is an occurrence not hitherto noticed in that locality, where not more than one of the above species is

heard in a season, the account, as forwarded to me, may not be uninteresting. Three of the nests were built upon the ground within a few yards of the hedges, and were composed of rotten stubble at the bottom, —the stems and leaves of grass in the walls or sides, the finer portions being arranged on the inside, which latter is deeper than it is wide. The fourth nest was several inches from the ground, having been carried up by the luxuriance of a tuft of rye-grass, in the centre of which it had been placed, and was supported by the strong stems of the grass, after the manner of a reed wren's nest in a bed of reeds. One of the nests contained two eggs, another five, and the remaining two six each, some of which are now in our museum. The five eggs were hatched, and my friend often saw the old bird sitting on the nest, with head and tail erect, the latter spread like a fan, suggesting the idea that her body had been forced down into the bottom of a small hole, the head and tail refusing to follow. The bird appeared much attached to her nest and young, for although many times disturbed she invariably ran a few feet only from the nest, and, spreading her wings and tail, counterfeited lameness by falling first on one side and then on the other, her tactics to deceive surpassing those of the partridge. Suddenly she would disappear under a tuft of grass, and in a few seconds reappeared on the top of it, and, drawing herself up to her full height, utter an angry metallic clicking note, not unlike that of a first-class gun-lock. The eggs of this nest were hatched in a few days after the nest was found, and, as the grass had to be removed by haymakers, my friend removed the nest, and placed it on the hedge-bank for safety, when the old bird (for there was but one visible) fed the young ones as usual. As soon as the grass had been removed the nest with its occupants was returned to its original position, the conduct of the parent remaining the same. When about a week old the brood deserted the nest during the day, making short excursions in the surrounding grass, along roads curiously laid out by the old birds for their own safety and that of their young. These roads somewhat resemble those of the grass mouse, and consist of two mains about a yard in length each, and opposite to each other, dividing at the nest which they encircle; several short runs or tracks run out of the main on either side, in which the birds probably hide themselves when an enemy (a weasel or stoat) approaches. The explorations of the young birds increased daily, and when anyone approached they sank down as close to the ground as possible, each bird separate. About the ninth day the nest was entirely abandoned, although its late occupants were unable to fly. It appears strange that so many birds of this species should build in one field, and the more so as they are seldom heard or seen in the neighbourhood. It may be that they were attracted by the unusually large crop of rye-grass, some of which measured three feet in height, and some much higher. One peculiarity, which may have been noticed by others, is the difficulty of ascertaining the exact position of the

bird by the note it makes. My friend disturbed one from the grass-field mentioned; it perched on a briar in the hedge near, and, appearing satisfied that it was out of danger, commenced its peculiar rattle-like note, which at one moment appeared to be behind the listener, at another before him, then on one side, and then the other, and had it not been for the action of the throat and tail, upon which my friend's eyes were fixed, he would have doubted the ability of one bird to practise such a deception, for no ventriloquist could have been more successful. This occurred in the same field as that in which the nests were found, near the village of Welford, in Gloucestershire, across the western end of which the soft-flowing Avon glides smoothly towards the Vale of Evesham. I may as well state that several of these birds have been heard near this town during the season, and according to a naturalist residing in the neighbourhood they are very common in Sutton Park, near Birmingham.—*John H. Bayliss, jun.; Tamworth, September 14, 1872.*

Snow Bunting.—On the 20th of September I shot a male adult of this species, on the shore between Hunstanton and Thornham, in very good condition. Is not this unusually early?—*H. R. Leach; Oak Hill, Hampstead, N.W.*

Lesser Redpoll.—In your editorial note appended to Mr. Nicholson's communication on this species (Zool. S. S. 3235), you say your experience would lead you to give swamps and streams abounding with alders as its favourite haunts, and that you have not seen it on high or dry grounds. Here, though it is frequently found amongst alders, I cannot see that it has any particular preference to them, but is generally distributed and breeds commonly all over the neighbourhood; neither does it show any partiality for building in alders, but nests in orchards, in apple and pear trees, also in elms, lime, birch, beech, whitethorn-bushes, &c. In autumn we have large arrivals of them from the north, chiefly young birds, but they mostly leave us again before winter. In severe weather I have noticed them hanging and climbing about reeds and sedges in ditches. Some of the old males wear the rich crimson on the head and breast during winter.—*F. Boyes; Beverley.*

Starlings Building in September.—For the past month I have observed a pair of starlings frequenting a hole near the chimney of a house where they annually breed, and in the mornings I hear a mournful sort of ditty, as well as a gurgling kind of sound, such as the birds perform, especially near their nesting-places in the spring; and the belief that they are building is further confirmed by seeing them with nesting materials in their beaks. I perhaps ought to observe that these performances are gone through in the early morning only, as during the day the birds are nowhere to be seen. Is such a habit of this well-known, common, but beautiful bird of frequent occurrence?—*G. B. Corbin; Ringwood.*

Cuckoo's Stomach.—I send you the stomach and its contents of a young cuckoo found dead on the 23rd of August. I had seen the bird a day or two before; it was sitting on the battlement of a bridge, and allowed me to approach within a few yards of it. I thought it looked very sickly. On examining it I could find no trace of any injury it had received; and it seems to have died through not being able to digest the enclosed stringy mass: I took it out of the stomach and partly loosened it; it was a tightly laced ball, covered with fine sand, which fell off when it dried.—*J. Selater; Castle Eden Castle, September, 1872.*

[This curious mass appeared to consist of grass dried into a state of hay, and then tightly rolled into a ball: I am unable to give any explanation of this occurrence, having never seen or heard of anything of the kind before.—*E. Newman.*]

Swallows roosting on Rushes.—This evening, while walking round the lake, on the side of which there are several patches of bulrushes, I heard a rustling noise; and on going to see what caused it I found that the bed was full of birds just going to roost, and making themselves comfortable for the night. There must have been hundreds of them, the greater part being the common swallow, though there were a great many house martins and wagtails. Great numbers of the reeds in which they were roosting were broken and cracked, showing that it must have been a favourite place. When disturbed the birds flew up in a cloud, but soon returned again.—*J. Whitaker, jun.; September 28. 1872.*

White Swallow.—On the 11th of September I saw, at the birdstuffer's in Nottingham, a white swallow; the whole of the plumage was white, except the breast, which was tinged with pink.—*Id.*

Diseased Partridges.—Nearly all the partridges in this district are diseased. I have heard of numbers of hares found dead this year in districts where the foot and mouth disease is prevalent. The theory is that they are poisoned by the grass infected by the saliva of the cattle. Can this be true?—*Arthur G. Latham.*

Quails in Nottinghamshire.—Whilst mowing a piece of wheat on the 5th of September, about the last in the neighbourhood, the men flushed from fifteen to twenty quails; the farmer, who was by with his gun, killed a brace. On the 9th I flushed ten, four of which I killed, three of them being birds of the year.—*J. Whitaker, jun.*

Sanderling and Cockle.—On the 2nd of September my brother shot a sanderling having a cockle-shell attached to the middle toe; the fish in the shell was alive, so I suppose the bird had been caught by accidentally treading on it.—*H. R. Leach.*

Notes on the Heronries of Norfolk and Suffolk.—I have read with much interest Mr. Harting's valuable paper on British heronries (*Zool. S. S.* 3261); and I desire to offer a few additional remarks on those of the

counties of Norfolk and Suffolk. Thrigby and Norton Hall must be added to the list of extinct heronries in Norfolk, both these localities being in that county, though by some accident they have been placed under the head of Suffolk in Mr. Harting's paper. The ownership of the celebrated Diddlington heronry is also incorrectly given; it is now the property of Mr. Tyssen Amhurst, the present possessor of the estate, which formerly belonged to the late Colonel Wilson, afterwards Lord Berners. Many interesting details respecting this and other Norfolk heronries will be found in Stevenson's 'Birds of Norfolk,' vol. ii. p. 130. The colonies of herons which at various periods have settled at Taverham, Cossey, and Kimberley, are believed to have been all offshoots from the heronry which, after many vicissitudes, is now seated at Earlham, near Norwich. This parent heronry was last year computed by my son, Mr. J. H. Gurney, jun., to consist of twenty-six nests. An instance of a small colony of herons on the north coast of Norfolk occurred (as I am informed) about the year 1840, in the parish of Weybourne, where five nests were built on low trees, but were deserted in consequence of being plundered the following year by some fishermen, who used the young herons for the ignoble purpose of bait for their lines. The extinct heronries at Reedham, and at the adjacent parish of Claxton, were formerly also nesting-places of the spoonbill, as is recorded by Sir Thomas Browne, who died in 1682, and who also speaks of the spoonbills as still breeding, at the time when he wrote, at Trimley, in Suffolk. Sir Thomas mentions them as "building upon the tops of high trees," but does not state whether those which formed the colony at Trimley resided in a heronry. I visited the parish of Trimley last year, but could not find any tradition remaining of a heronry having existed there. I may add that the heronry at Blackheath, in the parish of Friston, near Aldborough, in Suffolk, which Mr. Harting alludes to as formerly in existence, was still in full prosperity when I visited it last year: it is a large colony, and I was assured by a resident on the spot that it contained as many as two hundred nests, which are scattered over a large wood of rather low Scotch firs overlooking the River Alde: this figure may be an exaggeration, but the number of nests which I saw in the portion of the wood which I visited was very considerable.—*J. H. Gurney.*

PS.—Since writing the above I have been informed of three small additional colonies of herons in Norfolk—one at Stokesby, near Acle; the other two in the respective parishes of Westacre and East Walton, in West Norfolk.—*J. H. G.*

Heronry in Suffolk.—On the right bank of the Blythe, between Blythborough and Walberswick, there is a small heronry, in a clump of tall firs, consisting of about half-a-dozen pairs, on the property of Sir John Blois. This is not included in Mr. Harting's list.—*Henry Durnford; October 1, 1872.*

Heronry in Cornwall.—In the list of heronries given in the 'Zoologist' for October, Cornwall makes a poor figure. I have known Trenant's Wood for upwards of fifty years, and long before the Peels came into the neighbourhood the portion of the wood where the herons breed was known as "the heronry," now more than twenty years since. In the present Mr. Peel's grandfather's time I remember eight nests there, in old oak trees, but, unfortunately, during the breeding season, the trees were thinned out, and since that time two or three nests have been the outside of the number in one year, but I believe a year never passes without one or more pairs breeding there.—*Stephen Clogg; East Looe, Cornwall.*

Little Bittern in Nottinghamshire.—A fine specimen of the little bittern was shot the first week in August on the canal-side at Draycott, by a gamekeeper of Mr. Towls. The bird is a female, and in good plumage: it was beautifully killed for preserving, only one shot going through its neck. This is the second specimen of this rare British bird killed in this county up to the present time.—*J. Whitaker, jun.*

Spotted Redshank near Arundel.—I have just seen a specimen, in winter plumage, of this bird, which was shot last November at Leominster, near Arundel: it has been set up by Mr. Swaysland, of Brighton, and is in the possession of a young friend.—*Samuel Stevens; 28, King Street, Covent Garden, October 17, 1872.*

Landrail taking to Water.—I was out shooting on the 19th of the present month, when my setter made a point by the side of a small stream, and on going forward I saw a landrail crouching just under his nose. When the bird saw me it ran into the stream and swam across to the other side, poking out its head and flirting its tail like a moorhen, and then, rising on wing, was bagged. It is new to me to see a landrail taking to water in this manner, and may also be strange to many of your readers. Large flocks of fieldfares and golden plover are now on the moors near this.—*Murray A. Mathew; Gidleigh Park, Chagford, Devon, October 21, 1872.*

Sabine's Gull at Bridlington.—On the 10th of August, as I am informed by Mr. Jones, a Sabine's gull, "*in full summer plumage*," appeared in Bridlington Bay, in company with a flock of sea swallows, and was shot.—*J. H. Gurney, jun.; Northrepps.*

Blackheaded Gulls in Oxfordshire.—On the 9th of September I noticed a small flock of six to eight blackheaded gulls, mostly immature birds, flying over the Thames, near Ark Island, fifteen miles above Oxford. The birds were travelling towards the west.—*A. H. Smee; September 13, 1872.*

Ornithological Notes from Norfolk.

By HENRY STEVENSON, and J. H. GURNEY, jun., Esqrs.

(Continued from Zool. S. S. 3228.)

AUGUST.

Pied Flycatcher.—On the 21st I saw one on the side of the cliff at Overstrand.—G.

Lapwing.—An unusual and very pretty variety was recently shot at Hickling, mottled all over with white feathers, as if powdered. Varieties of this bird's eggs, having a pinkish ground colour, were taken this year at Dersingham.

Greenfinch.—As late as the first of August Mr. Norgate saw two or three nests of fresh-laid greenfinch's eggs.—G.

Marsh Tit.—On the 4th I observed some marsh tits bending down the ears of corn to get at the grain. The keeper has sometimes seen these and other tits eat the pheasants' oats.—G.

Golden Plover.—First golden plover seen at Blakeney on the 3rd.—G.

Blacktailed Godwit.—A young male was shot at Breydon on the 12th.—G.

Little Stint.—A pair of old ones in change were shot at Breydon on the 12th.—G.

Curlew.—I am informed that, on the 15th, eight were seen on the river at Hellesdon, which is within a mile of Norwich.—G.

Cuckoo.—Three young cuckoos, killed late in this month, had the upper tail-coverts gray, with the rest of the plumage of the usual brown tint.

Ring Dotterel.—On the 3rd I caught a nestling only a very few days old: quite a late hatched one.—G.

Wood Sandpiper.—I am indebted to Mr. Upcher for a bird of the year, shot by him on the 1st at Blakeney.—G.

Turnstone.—As late as the 19th I saw a pair of turnstones in summer plumage, which had been obtained by Mr. Upcher at Blakeney.—G.

Greenshank.—I saw a few pairs at Burnham Overy at the close of the month.—G.

Great Snipe.—An immature bird of *Scolopax major* was killed at Stalham on the 29th. Some large flights of the common snipe were observed in one or two localities about the same time.

Common Sandpiper.—The annexed note is from Southwold, and communicated by Mr. Durnford:—"August 24th. To-day I observed a flock of about fifteen birds on the beach: when disturbed they flew out to sea, after the manner of dunlins, and alighted a little further on. I have never noticed these birds in such a locality before." On the 26th I saw more at Cley than I had ever noticed before; some of them were on the beach, but on the side of it furthest from the sea.—G.

Woodcock.—I hear that a single bird has been about Gresham all the summer, possibly the mate of the one which was brought me (Zool. S. S. 3227).—G.

Green Sandpiper.—Mr. H. Durnford has favoured me with the following note from Southwold, in Suffolk:—"August 15th. I procured a fine old bird to-day: they are scarcer than usual this year. August 23rd. This morning I noticed five more up the river: they frequent the small creeks and ditches at the back of the wall, more than the main river, and are nearly always to be found in the same spot; they scarcely ever whistle, except when in the air searching for a good spot for feeding: when put up they rarely utter any sound: in this they would seem to differ from other sandpipers. About the 20th I observed one perched on a post." This species has not been scarce in Norfolk, some having come under my observation during the month. I flushed two on the 30th at Burnham, from exactly the same spot where I flushed one on the 29th, and they uttered no cry in rising, but they are not always thus mute.—G.

Lesser Tern.—On the 1st I watched these elegant birds delivering shrimps and fish to their full-grown young, at Blakeney. I have noticed that various other birds continue to feed their young long after they must be able to cater for themselves. After a summer's rest I found them remarkably confiding and tame, but they will get wary enough by being shot at before they leave; the fore part of the crown was beginning to be mottled in the old ones. Yarrell says that he has "frequently seen them alight on the water" (B. B. vol. iii. p. 411), which is entirely contrary to my experience. Some other points in his account have been commented upon in the 'Zoologist' (S. S. 100).—G.

Richardson's Skua.—On the 22nd I received one from Blakeney, agreeing with the middle figure in Yarrell's 'British Birds.'—G.

Gannet.—On the 27th I saw one at Blakeney in the curious piebald stage, intermediate between old and young. Local name “herring-gent.”—G.

Cromer Lighthouse.—On the 12th I received a young redbacked shrike from Mr. Combin, the lighthouse-keeper.—G.

SEPTEMBER.

Spotted Redshank.—Mr. Dack informs me that on the 12th a female was killed at Cley. Two others were shot at Yarmouth.—G.

Alpine Swift.—A fine specimen was shot from the long marsh at the back of Breydon Wall, near Yarmouth, on the 9th, and is the second example only that has been procured in this county. No other birds were observed at the time.

Pied Flycatcher.—On the 4th the keeper saw a pied flycatcher.—G.

Blacktailed Godwit.—One was shot at Yarmouth during this month.—G.

Partridge.—I am informed that about the 10th a nest of nine eggs was found at Westacre. Whether they were fresh or addled I did not hear; but Mr. Upcher states, in the ‘Field,’ that whilst shooting on the 15th, at Congham, his dog “caught a partridge *on its nest*,” containing eight eggs. On the 26th a variety, occasionally met with, was shot at Gresham by Mr. Hoare, darker than the ordinary type, and somewhat different in its markings. I have often thought that partridges vary nearly as much as grouse. I saw a handsome pied one on the 24th at Roughton. Two were seen last season on the same ground.—G.

Gray Wagtail.—A male, in full winter plumage, was shot by the Heigham river, near Norwich, on the 30th; and three others were observed at the same time.

Cromer Lighthouse.—On the 10th a greater whitethroat flew against the lighthouse; wind W.S.W. On the 11th a redstart; wind W.—G.

Great Snipe.—Another immature bird was killed at Stalham on the 14th.

Swallow.—My father informs me that on the 18th a white one was shot at Knapton by Mr. T. Cross; another was seen like it.—G.

Temminck's Stint.—Two were shot by a gentleman collecting at Yarmouth.—G.

Common Tern.—On the 27th a young bird was picked up in Norwich, and taken to Mr. Gunn.—*G.*

French Partridge.—A variety, having the whole of the under parts below the breast white, was killed in this county early in the month.

Ornithological Notes from North Lincolnshire.

By JOHN CORDEAUX, Esq.

(Continued from S. S. 3209.)

AUGUST, SEPTEMBER AND OCTOBER, 1872.

Curlew.—Flocks of this species, composed apparently altogether of the young of the year, arrived in the marshes about the middle of August, and for the next four or five weeks regularly daily visited our larger pasture-fields contiguous to the coast. I have counted as many as forty together, all intently searching amongst the grass for insects, grubs and worms, which at this season compose their principal food. They are always rather shy, and unless on horse-back it was never easy to get near them, yet I managed to shoot four within a week by merely stooping under the drain-banks when I perceived them about to cross over from one feeding-ground to the other. They were very fat. At this season the young birds may be eaten, and, nicely done on toast, like a woodcock, are quite equal to any other of our shore birds; later in the season, when they draw their supply of food from the river-flats, their flesh becomes both bitter and unpalatable. Early one morning in this month a flock alighted on the roof of one of my marsh wheat-stacks, which was an odd place for curlew to settle upon; they perhaps mistook it for a rock! I have found a curious parasitic fly on this species; this, however, is most difficult to procure, as it leaves the bird directly after it is killed: they are about the size (and not unlike in shape) of the common housefly, but very flat, and of a light brownish colour: they run with great rapidity. I regret I have as yet had no opportunity of examining specimens minutely. The wailing but musical cry of the "whaup" seems ever in keeping with the dreary character of our marshes and coast. To me there is ever a chord of sadness in this call—speaking of Nature, and of Nature's wildest solitudes, the moorland summit or the lonely wave-washed shore, and which tells not of the haunts of men or the roar and

turmoil of great cities. Hear it where or when we may, whether by day, or shrill and startling from the darkness, coming out of the silence and bleakness of night like the plaint of some wandering ghost, there always seems a fascination in the sound, which, more especially to us dwellers on the coast, will recall familiar scenes and places.* Watch them, too, as they go slowly beating to windward against the rising squall, with a background of leaden storm-cloud, when the curtains of the rain are lowering,—sweeping majestically like the trail of some dark garment along the horizon,—are they birds or only fragments of gray paper blown fitfully about with the blast?—flickering as they catch the light on their plumage, now above, now below, and looking as Tennyson has so well depicted—

“*Dreary gleams about the moorland flying over Locksley Hall.*”

Turnstone and Sanderling.—In the second week in August there were great numbers of both these species at Spurn, mainly birds of the year.

Linnet.—Are now by thousands on the marsh stubble-fields, feeding on the seeds of the charlock, knotgrass, &c.

Snipe.—September 10th. The first flight arrived about this date.

Chimney Swallow.—September 17th. I see the swallows are congregating for their journey home; there are hundreds every morning perched on the telegraph-wires near my house. They left us in the last week in the month, after the 25th. On Wednesday, the 25th, there was a terribly cold drifting rain from the N.W. and a high wind accompanying it. On this day hundreds of swallows, particularly the young of the year, perished miserably. At my marsh farm scores sought refuge from the cold in the buildings. My man picked up a dozen together in the barn, all dead, and others about the stables and sheds; many, too, were so benumbed as to be unable to fly: he took several into the house and put them down before the fire; very few, however, came round—they died

* Sir John Sinclair, in his ‘Statistical Account of Scotland,’ narrates the following anecdote:—A Scottish gentleman, who visited England for the first time, and ardently desired to return home to his native hills and moors, was asked by his English host to come out into the garden at night to hear the song of the nightingale, a bird unknown in Scotland. His mind was full of home, and he exclaimed, “Na, na! I wadna gie the wheeple of a whaup for a’ the nightingales that ever sang.”—*J. C.*

probably as much from want of food as from exposure. On the evening from forty to fifty of the poor little things were clustered together like young chickens on one of the barn beams: they had huddled together in a lump for warmth. In the morning several lay dead beneath this beam, having succumbed during the night. Altogether it was a sad day and night for the poor swallows. A few more days of fine weather and they would have left us. They tarried this year a little too long.

Teal.—September 18th. Several small family parties of teal have appeared about the river foreshores and neighbourhood.

Gray Plover.—September 19th. First autumn arrival; a small flock seen by me in the marshes.

Golden Plover.—September 20th. First arrivals.

Knot.—Some small flocks on the flats in the last week in the month.

Thrush, Blackbird, Lark, &c.—There was almost a continual arrival of thrushes, blackbirds, larks, greenfinches and other small birds, on this coast and in our marshes, during the last week of September and first week in October.

Hooded Crow.—October 8th. First observed. The hooded crows arrived with a heavy gale from the south-west with drifting rain and sleet.

Wild Geese.—October 10th. First skein of geese passed over.

Fieldfare.—October 15th. Flocks of fieldfares seen; first appearance.

Woodcock.—October 17th. The first flight of cocks came on the night of the 17th; wind E., blowing hard.

Wood Pigeon.—October 19th. I found a wood pigeon's nest this morning with two young half-fledged birds.

Snow Bunting.—October 23rd. First arrivals; a small flock seen on the embankment, and specimens procured by me.

Water Rail.—October 28th. I killed a water rail to-day in the marsh, which I believe was a migrating bird, as some of the contents of the stomach are foreign to these marshes. It was a female, by dissection, and the gizzard contained fragments of Coleoptera, larvæ of Neuroptera, bits of sea-shells, quartz and chalk, part of an earwig, and the head-bones of a small fish.

October 31st. I have to-day had a very long walk with a friend along the coast above Tetney Haven, and returned more than ever impressed with the utter dreariness and desolation of the district.

We saw immense flocks of waders, as knot and dunlin, also gulls, curlew and gray plover. On the "fitties" were numerous redshank—indeed I do not recollect at any time having seen so many in one day: they rose from the creeks in small parties from five or six to twenty together. Once I came suddenly on about fifteen feeding in a shallow creek or basin sheltered from observation by tall plants and sea-grass. It was worth seeing when the affrighted birds rose in a lump, and, with shrill screams and pipings, squandered right and left, trailing their light red legs and exhibiting a plumage with strongly contrasting bars of black and white. I did not let them get out of range without securing a very nice clean-shot example. My companion killed a shorteared owl which rose close to his feet from the "marram." The knot and gray plover were wild and shy; difficult to get at, too, as they kept to the open coast. Late in the afternoon, and when the rapidly advancing tide—a tide which gallops in like a horse—had swallowed the miles of sand and "fittie," the birds come from every direction to a sand which for the next half-hour would be uncovered. The amount of gulls and waders collected at this one spot was enormous: the bank looked fairly paved with birds, and it was difficult to believe that those dark and white masses were really endowed with life and made up of winged creatures. Immense flocks also kept perpetually careering aloft round the bank, now black as a crowd of starlings, and then instantaneously flashing white. All this, with a glorious sunset, a fresh breeze, and a tumbling sea rolling in across this barren coast, was worth driving miles to see.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire,
October 31, 1872.

Marsh Harrier in Norfolk.—I received a fine male of this species from Hickling on the 12th of October.—*T. E. Gunn*; 5, *Upper St. Giles' Street, Norwich*.

Great Gray Shrike near Yarmouth.—On the 23rd of October, 1872, an immature male of this species was shot at Burgh St. Peter, near Great Yarmouth. Its stomach contained the remains of a single beetle.—*Id.*

White Variety of Song Thrush.—A pure white variety of the thrush, an immature bird, was taken in June last, at Herringfleet, near Lowestoft, Suffolk.—*Id.*

Varieties of the Blackbird.—An entirely white specimen was caught at Hempnall on the 12th of July: it appeared in a very weak and half-starved

condition, and died after being caged a day or two. It was a very small specimen: had pink eyes; pale flesh-coloured legs, toes and claws; beak lemon-yellow. On dissection it proved to be a male. A splendid adult male bird was shot, on the 19th of October, at Weston, near Norwich, the head and neck being entirely pure white, and was beautifully mottled with white feathers over the rest of its plumage.—*T. E. Gunn.*

Hawfinches in Suffolk.—Two adult male hawfinches, in summer plumage, and a young male, were sent me from Yoxford, in Suffolk, on the 26th of June.—*Id.*

White Sparrow near Norwich.—An albino house sparrow, an immature bird, with pink eyes, was obtained on the 2nd of October, at Hingham, near Norwich.—*Id.*

Piebald Redlegged Partridge.—A splendid old male bird, with pure white breast, was shot at New Buckenham, near Norwich, on the 21st of September.—*Id.*

Length of Life of Peacocks.—I have in my possession a peacock which was lately killed by accident; it had reached the age of ninety-six years. This fact I have been able to prove beyond all doubt, from the recollection of people living on the estate. It has just been beautifully stuffed by Mr. Edwin Ward, of Wigmore Street. The long feathers of both wings are quite white, which I take to be a sign of old age. For the last two or three years it had been getting rather feeble. Can you tell me if it is usual for these birds to live to such a great age?—*E. D. Lee; Hartwell House, Aylesbury.*—*From the 'Field' of November 9th.*

Are the Channel Islands Birds British?—I was in hopes that this vexed question had been finally settled by Mr. Cambridge, to whom I am much obliged for his solution of it, which I think is the right one, and that instead of "British," we should say "Great Britain, Ireland, and the Channel Islands, including the Isle of Man," which I believe is the way the Acts of Parliament put it. Here we are put before the Isle of Man, which nobody doubts to be British. I know nothing of Entomology, but I should have thought insect collectors would have been only too glad to be able to enlarge their collections, till they equal all other European collections together, in an area so comparatively small as that of the Channel Islands, instead of having to go all over Europe for the purpose.—*C. B. Carey.*

Are Guernsey Birds British?—The question introduced to our notice by Mr. Carey (S. S. 3066) has gradually assumed a wider range, until Mr. Birchall, in the November 'Zoologist' (S. S. 3304), has totally altered it, in this manner, "Are the Channel Islands British?" and has charged me with giving "a qualified assent to the affirmative." My friend has also chosen insects, instead of birds, as the branch of Natural History for enforcing his views. However numerous the lines of argument opened up by these deviations from the original proposition, I believe they will all be

comprehended in the following formula:—"Seeing that all our botanists include the Channel Islands in the British Flora, ought we, or ought we not, to include them in our British Fauna." My own opinion has not been very strongly in favour of either course; but I have felt a leaning towards a uniformity of practice, a leaning which has increased, and has become more decided with each successive expression of opinion, until Mr. Birchall, the last in order of time, settles the matter to my entire satisfaction, and I am fully prepared to include the Channel Islands in the British Fauna, or more correctly speaking, in the Fauna of the United Kingdom. If it be the case that *Agrotis Ashworthii* is the English form of *Agrotis candelisequa*, *Agrotis lunigera* of *Agrotis Trux*, *Hadena assimilis* of *Crymodes exulis*, and *Acronycta Myricæ* of *Acronycta Euphorbiæ*, how important is it that we should at once call them by their correct names, nor longer pander to our insular vanity by giving them insular names! Should the extension of our Fauna to the Channel Islands induce this single good result, should it induce our entomologists to adopt a uniform nomenclature, that alone would be a sufficient reason for adopting the course suggested. But there is another good that is certain to result. We have a multitude of young entomologists who possess abundant means, and who are anxious to obtain species that they have failed to capture on English soil. I will particularly mention two, *Daplidice* and *Lathonia*: they willingly give twenty-five or thirty shillings apiece for specimens of either of these, provided the dealer will assert that they are "British"; and there are swarms of dealers who will gladly supply any number of specimens on the required terms and conditions. I cannot take upon myself to read a moral lecture to the impostors or the dupes: I fancy it would be hard to resist the temptation of selling copies of the 'Zoologist' at two pounds each if there were buyers foolish enough to give such a price, even supposing I were disposed to assert there were some *fancied* superiority in the coveted copy: I italicise the word *fancied*, because there is no *real* difference between one copy and another of the 'Zoologist,' or between English and European specimens of the butterflies in question. Let us suppose Guernsey *Daplidices*, by the amended usage, become British. Why next year I should receive the following note from Mr. Birchall himself:—"How are you off for *Daplidice*? I have taken a few hundreds in Guernsey this summer, and will send you a box-full for distribution on your Friday evenings if you like; and, by the way, I have lots of *Lathonias*, if you care for them; also a score or two of *D. Euphorbiæ*. How many shall I send of each?" What would be the effect on the dealers, the buyers and the sellers? A bombshell bursting among them could not produce greater consternation. After the first panic, reducing the quotation of *Daplidices* and *Lathonias* to zero, they would probably look upwards, and finally settle at threepence or sixpence each. The little island of Heligoland is introduced by Mr. Birchall as a kind of stumbling-block in the way of such an arrangement: by all means let us

include the stumbling-block also. Seeing that my friend can show that Heligoland is British in the same sense as Guernsey and Jersey,—and prove that it is included in the “United Kingdom,” as intended by our Acts of Parliament,—by all manner of means let us call it British, and incorporate its Fauna with that of Great Britain properly so called. With regard to Gibraltar and Malta, we had better defer the question of annexing *their* Fauna until botanists have annexed their Flora, when we may with considerable show of propriety consider such a step. It seems incumbent on those who advocate the adoption with our Fauna of a different course from that universally accepted for our Flora, to state explicitly the grounds for maintaining such a usage. Does any other country in the world adopt such a course? Does any country in the world consider its plants indigenous and the creatures that feed on them exotic? But my friend says “the sea is a definite boundary”; true, yet this argument would not only eliminate the Channel Islands, but would cut off all the Scottish islands, the Isle of Man Ireland, and even the Isle of Wight.—*Edward Newman.*

Notices of New Books.

A Handbook of British Birds; showing the Distribution of the Resident and Migratory Species in the British Islands, with an Index to the Records of the Rarer Visitants. By J. E. HARTING, F.L.S., F.Z.S., &c. London: Van Voorst. 1872.

SOME of us who possess the writings of Montagu, Selby, Macgillivray and Yarrell may possibly think there was no need of another work on British Birds:

“Practical ornithologists, however, who may take up this Handbook will see in it an attempt to supply a want which, notwithstanding the admirable works above referred to, they must have frequently experienced; for in two important respects, at least, do these fail to satisfy their requirements: they do not distinguish with sufficient clearness the species which are truly indigenous to Great Britain from those which are but rare and occasional visitants; nor do they indicate, with sufficient authority, the scientific nomenclature which should be adopted for the species of which they take cognizance.”—*Introduction*, p. iii.

I particularly recommend the “Introduction,” from which this is quoted, to the readers of the ‘Zoologist’: it has been compiled with the most evident care, and in a spirit of perfect truthfulness. It gives 395 as the corrected total of birds which have been recognized as occurring in Great Britain. “Of these in round numbers

130 are residents, 100 periodical migrants, and 30 annual visitants; the remainder [135] being rare and accidental visitants:" it thus appears that a third of the species described or enumerated in books or lists as "British" Birds have no just claim to the title, a circumstance which it would be well for students to bear constantly in mind. The following additional explanations are given:—

"As RESIDENTS are included those species which rear their young annually in the British Islands, and are to be found in some part or other of the kingdom *throughout the year*.

"PERIODICAL MIGRANTS are those which visit us annually and regularly at particular seasons, and whose advent and departure may be dated in advance with considerable precision.

"The ANNUAL VISITANTS comprise those which occur in some parts of the British Islands annually, but comparatively in very limited numbers and at irregular and uncertain intervals."—*Id.*, p. v.

Of the residents 13 are not found in Ireland, and 9 are either unknown or extremely rare in Scotland. Of the periodical migrants, the great majority of which come to us from the south, 10 do not reach Ireland, while 8 others are but of rare occurrence there: in Scotland 10 also are never or very rarely met with. With regard to annual visitants, Ireland is not visited by 8 or 9 which find their way to England. Ireland does not possess any characteristic birds, as is the case with Scotland.

"The rare and accidental visitants," continues Mr. Harting, "form a large proportion of the total number of species in the British List, being 135 out of 395, or rather more than one-third of the whole. If from these we exclude the terns, gulls and petrels, many of which are almost cosmopolitan in their distribution, it will be found that of the remainder, 48 are European, 14 Asiatic, 11 African and 42 American in their origin."—*Id.*, p. viii.

Mr. Harting dwells earnestly on the difficulties which constantly beset the conscientious historian who meets with records of the capture of these exotics: 1st, we have the communications of over-zealous, and I may add inexperienced, collectors, who give a name to a bird before they have ascertained *the correct name*; and 2ndly, the practice of unscrupulous dealers to palm off foreign specimens on unwary collectors, with the assurance that they have been killed in some part or other of the British Islands. I see no remedy for this. So long as there are geese ready to be plucked, there are sure to be

quill-dealers ready to pluck them; to some there is a fascination in being duped which is perfectly irresistible: remonstrance, advice, caution, are totally unavailing.

I believe every ornithologist will thank Mr. Harting for the trouble he has taken to distinguish with sufficient clearness the species which are indigenous from those which are occasional visitants, but there will probably be some slight difference of opinion as to his decision. In his 'Cybele Britannica,' the most philosophical work of the kind ever published, Mr. Watson has a group of plants which he calls "Denizens," and he thus defines the word—"Denizen—At present maintaining its habitats as if a native, without the aid of man, yet liable to some suspicion of having been originally introduced." Such among birds are the pheasant, the redlegged partridge and the swan; yet the pheasant and redlegged partridge are given by Mr. Harting as "British Birds properly so called," and the swan, because a domesticated species, is omitted altogether. I consider all three determinations wrong. The aid of man has certainly assisted in the introduction of the pheasant, probably in that of the partridge, possibly in that of the swan. Yarrell says it is recorded that swans were first brought into England from Cyprus by Richard I., and he very truthfully speaks of it as being now "half-domesticated." There can, however, be little or no doubt that some of those swans which have been killed here in hard winters were voluntary visitors from the Caspian and Black Seas and the Danube, while no one, so far as I can learn, has ever suggested that this has been the case with the Colchican pheasant. I think it can be shown that two or three centuries ago the swan was not an uncommon water-fowl in a perfectly wild condition; but, like the stork and the crane, it has retired to avoid persecution. The American swan (*Cygnus americanus*) and the trumpeter (*C. Buccinator*) are given in the accidental list, as if to make amends.

Again, the woodchat (*Lanius rutilus*) has less claim to be considered British than the Greenland falcon, of which more than a score have been obtained; or than the redfooted falcon (*Falco vespertinus*), of which three score have been noticed,—perhaps the report of the woodchat nesting at Freshwater, in the Isle of Wight, may have influenced Mr. Harting in this decision; but then we find the waxwing (*Ampelis garrulus*) included as British, and this certainly does not nest here; at the same time, the nutcracker

(*Nucifraga caryocatactes*) is left out in the cold, although in this case there are a score of unquestioned records of its occurrence: the questionable ortolan (*Emberiza hortulana*) is admitted, while the pine grosbeak (*Pinicola enucleator*), parrot crossbill (*Loxia pityopsittacus*) and whitewinged crossbill (*L. bifasciata*), those old and respected inhabitants, are turned out. I cannot say a single word in defence of the black woodpecker (*Picus martius*); I should certainly have expunged him and his thirty-three localities from both lists; but I regret the fate of the collared pratincole (*Glareola pratincola*) and the blackwinged stilt (*Himantopus candidus*).

At page 179 is given, in parallel columns, a summary of Mr. Harting's decisions whether a species shall be considered truly indigenous or not: the difficulty of the task is abundantly manifest, and although these decisions, in many cases, seem rather capricious and arbitrary, yet I believe they would still have that appearance however they were altered. On one point there can be no difference of opinion—the extreme utility of the second list, and the great boon Mr. Harting has conferred on us by the publication of the particulars of every instance in which the occurrence of a rare species has been recorded. The question why a species that has occurred a dozen times should be called “British,” and one that has occurred two dozen times should be called “accidental,” is open to discussion; but there can be no two opinions as to the value of the details given in the “accidental” list.

I shall, I believe, never be a disciple of the views of nomenclature which Mr. Harting appears mildly to advocate. I am disposed rather to be a convert to the views of Mr. Lewis, as expressed in regard to Entomology, and think that the “resurrection-men of science” are doing us an irreparable injury. One observation more; I do not exactly perceive how Mr. Harting has kept the promise of his title as regards “showing the *distribution* of the Resident and Migratory species in the British Islands.”

EDWARD NEWMAN.

Ornithological Notes from the North-Western Provinces, India.

By ANDREW ANDERSON, Esq., F.Z.S.

(Continued from Zool. S. S. 2678).

Nesting of the Whitebacked Vulture.—Camp Muckunnuggur, Cawnpore, October 25, 1871. Encamped close to a group of trees, where a colony of

whitebacked vultures (*Gyps bengalensis*) were breeding. As they made me aware of their whereabouts by enlivening the still hours of the night with most unearthly screams,—a noise which I was not aware till then was produced by them *in copula* in their nests,—I determined to halt a day for the purpose of making investigations into their domestic economy and of procuring some of their eggs. While smoking my morning pipe under the trees, awaiting the arrival of men who could climb, I noticed that the vultures invariably brought branches with green leaves adhering to them to build with. Prosecuting my inquiries still further, I found to my surprise that they broke off these green twigs from only two trees, notwithstanding there were other kinds much more conveniently situated. The trees in question were the mango (*Mangifera indica*) and the jamun (*Syryngium Jambolanum*). The former was covered all over with that well-known parasitical plant called “banda,” so largely used in tanning leather in the absence of the babool bark; the latter had quite a whitewashed appearance, caused from the chalky droppings of the vultures, and was almost denuded of its rich green foliage, so much was it in demand for building purposes. It was a sight well worth seeing: the vultures would alight on these trees,—most frequently on the jamun,—sidle up to as near the end of a branch as their weight would admit of, break off twigs with a lateral movement of their powerful beaks, and then fly off to their nests, where their mates were already seated sorting the materials as they were brought. Whilst meditating why this predilection was shown for the above-mentioned trees, my men arrived, and with them a *posse comitatus* from the neighbouring villages, eager to know what “sahib” this was who was going to examine the nests of such dirty birds. On questioning, or rather I should say cross-examining, some of the most intelligent-looking men in the crowd, why the “gidhs” only went to the jamun and the mango covered with the above-mentioned parasite, I elicited the following curious and interesting facts:—*first*, that the vultures invariably build with green wood which they break off, and that they never alight on the ground for the purpose of procuring dry sticks, as is done by birds generally; *secondly*, that the reason the vultures crowded so on these trees in particular was because their branches were brittle, and consequently more easily broken off. “See,” said an old chowkeedar (village watchman), picking up a handful of sticks which had fallen from the nests, “all these belong to the jamun and banda; there is not a single piece of the ‘aám,’ although the vultures do settle on that tree,” pointing to the mango covered with the parasite. It does not do to dogmatize in such matters, but I am bound to say that, notwithstanding I spent the greater part of the day in watching these birds, they never once alighted on the ground, nor did they pay any other tree a visit, as far as I could see. Since the above occurrence I have paid considerable attention to the nidification of these birds, and I believe their building with green twigs may safely be

said to be an unfailing trait in their history. Indeed, so much so is this the case, that their nests shortly after completion have more the appearance of accidental collections of dry leaves than of birds' nests. I have yet another very interesting fact to record. I observed one vulture fly into a nest with a green branch, eighteen inches long (by measurement), which the other bird began speedily to arrange. We naturally concluded that this nest was only in the course of construction, and were going to leave it alone; but as no more branches were brought, and the bird at home gradually sank into her nest-cavity, sitting very close in spite of a shower of stones, I directed the man who was already up the tree to examine it also. To my surprise, this seemingly unfinished nest contained an egg about a week old, not only embedded in green leaves, but there were also freshly-culled branches laid along the circumference of the nest. The mid-day heat during October is something fearful, and I have no doubt that instinct guides these birds, in spite of their loathsome appearance, to shelter themselves from the scorching heat of the sun during their trying season of incubation. But what about *Aquila Bonellii*, that does exactly the same thing during the coldest season of the year? Three of the nests examined were on a mango; all the others were built on the peepul and burget (*Ficus religiosa* and *F. indica*), their favourite nesting-places. My morning's work resulted in a bag of twelve eggs: one taken haphazard weighed six ounces and three-quarters, and, with one exception, they were all of the normal colour, *viz.* pure white, stained with filth and decayed vegetable matter, according to length of incubation. I consider myself fortunate, however, in getting even one fairly marked specimen out of the lot: this one is speckled and blotched at the obtuse end with reddish brown on a ground colour as white as snow, the egg having been laid only a day or two before.

Voracity of the Imperial Eagle.—Camp Jawapore, on the Etawah Canal, Jan. 16, 1872. I had hardly proceeded half-a-mile beyond my camp this morning, when my gun-bearer drew my attention to an eagle in the distance, which was intent on devouring something on the ground. I lost no time in retiring behind a bank for the purpose of substituting a B.B. wire cartridge in one of the barrels of my gun (a D.B. duck-gun, gauge No. 7), for it was almost certain that the bird, in that position, would hardly allow me to approach sufficiently close to bag her. Before my arrangements had been completed the bird was gone, and she had evidently been scared away by a gang of boatmen who were engaged in pulling a boat up the canal. As the country was tolerably open, I threw out skirmishers on all sides, being almost confident that the offer of a reward would have the desired effect, for the bird could not possibly have gone far. Meanwhile I betook myself to the ground whence she had flown, and alongside a small pool of blood I found a sufficient quantity of feathers to enable me to identify her quarry—a spotted-billed duck (*A. pacilorhyncha*). A few minutes later the eagle was descried sitting

on a babool tree across the canal; but unfortunately I had to make a *détour* of nearly a mile before a bridge could be gained. What made matters worse was that, owing to the annoyance of the crows, and perhaps as much to an attack of dyspepsia, she had changed her position several times, and appeared very restless. As I was particularly anxious to secure this bird, almost more for the purpose of examining her crop than of becoming possessed of a specimen, I reversed the usual order of things, and shouldered the big gun myself, under cover of my saddle-horse, which was led up to the tree in the orthodox way by my gun-bearer.* During this manœuvre the bird again shifted no less than three times, flying on each occasion to the nearest tree, and although not apparently equal to a prolonged flight, she was nevertheless not inclined to allow me to approach within eighty yards. At last a lucky shot, just as she was about to make a fourth move, brought her to the ground; simultaneously with her fall she began to disgorge part of her hastily-swallowed meal. The crop of this eagle, which turned out to be a female example of *Aquila crassipes*, *Hodgson* (the eastern form of the imperial eagle), was enormously distended, and contained the entire legs (feet as well as tarsi complete), as well as one of the wings of the above-mentioned duck. The wing (carpal joint, primaries and smaller feathers intact) was half way down the gullet and required a considerable tug to pull it out. She was in very fair plumage, but not an old bird, as the white feathers on the scapular region were hardly developed. She measured thirty-two inches in length, and weighed well over seven pounds.

A. ANDERSON.

Futtehgurh, North-Western Provinces, India,
October 10, 1872.

Birth of a Young Hippopotamus at the Zoological Gardens.—I am delighted to be able to issue a bulletin that the "little stranger"—a male—has at last arrived. Mr. Bartlett, resident superintendent of the Zoological Gardens, has been good enough to inform me that this interesting event took place this morning, November 5th, at 7.15 A. M. Both mother and child are doing well. This—the third baby of our old friend Madame Hippo—is born with more sense than its late brother and sister, for it does not as yet require the services of the wet nurses—the goats—who have been in attendance for some days past. It will be recollected that the last two young hippopotami would not take their proper nourishment. The little animal born to-day, for whom the name of "Guy Fawkes" has therefore been proposed, has discovered, and readily makes use of, its mother's milk. The little thing generally lies sleeping by the side of its gigantic mamma, but sometimes it gets up and takes a tour of inspection round its den, when its family likeness can be immediately perceived. Every now and then the mother rolls her great eyes,

* Cf. P. Z. S. for 1871, p. 683.

listens attentively with her horse-like ears, and grunts loudly with a deep organ-like note; the young one instantly answers in the same note, but in an infantine key. Its colour appears to be that of a mahogany dining-room table: it is about three feet six inches long, and its weight about one hundred pounds. Eleven hippopotami have been born in Europe—six at Amsterdam, two at Paris, and three in England, but hitherto they have died in their infancy. Immense care is therefore taken of the new precious infant. The hippopotamus-house is kept perfectly quiet, and every precaution is taken by Mr. Bartlett—to whom the greatest credit is due for his able management and endless care in this matter—to prevent the mother being in any way disturbed by people moving about, doors opened, &c.; for if she were once put out, the poor old thing, who looks exhausted and anxious, would, probably, in her alarm, get up, rush about, and possibly not suckle her child, or else trample by accident upon it. Therefore, the public, I understand, cannot possibly be admitted to see the young one until the doctors pronounce that it is quite safe to do so. They will, in the mean time, I am sure, wish this little hippo “long life and a merry one.”—*Mr. F. Buckland, in ‘Land and Water.’*

The Seals (Phocidæ) that permanently reside in or occasionally visit the British Islands. By Dr. J. E. GRAY, F.R.S., &c.

I BELIEVE that there are only two seals that are regular inhabitants of the British Islands,—that is to say, inhabiting them at all seasons and breeding there,—as, first,—

The Common Seal (*Callocephalus vitulinus*). Very generally distributed. And secondly, the

Large Gray Seal (*Halichærus grypus*). Common on the west coast of England and Wales and the coast of Ireland, and the north-east and the west coast of Scotland, and the west coast of the northern part of England; but I have never received it from the southern, or southern part of the east, coast of England.

The Harp Seal (*Pagophilus grælandicus*) and the Marbled Seal (*Pagomys fœtidus*), which inhabit the North Sea, have been recorded as being found on the British coast, but they are only accidental visitors. The harp seal is said to be found in Shetland after very bad weather and a continued wind in one direction; and the marbled seal to have occurred once or twice in English markets, and is supposed to have been taken on the coast, but may have been imported.

The Hooded Seal (*Cystophora cristata*), which is an arctic seal, found in Hudson's Bay, Greenland, &c. A young animal is said to have occurred in a living state at Ipswich, and another on the west coast of France; but I suspect they were both accidental visitors, and most probably escaped from some vessel coming from the North Seas.

I have given the characters of all the species, both native and accidental visitors, that students may be able to make out the species should an "odd seal" occur. They are named as in the 'Catalogue of Seals and Whales in the British Museum,' 8vo, 1866, with woodcuts, and the 'Supplement,' 1871, both sold at a very low price.



Fore feet of Seals.

Hind feet of Seals.

PHOCIDÆ.

Muffle hairy on the edge, and between the nostrils. Ears without any conch, merely a small aperture. Arms and legs very short; wrist very short. Toes subequal, arched, exserted. Hind feet large, fan-shaped; the inner and outer toes large and long; the three middle ones shorter. The palms and soles hairy. Claws distinct, sharp. Skull:—Postorbital process none or obsolete; no alisphenoid canal, the mastoid process swollen, seeming to form part of the auditory bulla. The scapula extended upwards and backwards towards the posterior superior angle. Testicles enclosed in the body of the animal, without any external scrotum.

Section I.—Cutting teeth $\frac{6}{4}$, curved, conical and small. The palate produced nearly to the hinder molars. Muffle bald, callous.

Tribe I. PHOCINÆ.—Skull tapering in front. Nose-hole moderate. All the molars, except the first, with two roots.

1. CALLOCEPHALUS.—Branches of lower jaw diverging; lower edge of lower jaw rounded, simple; palate angularly arched behind; angle of lower jaw blunt, sloping behind. Whiskers waved. Web between the hinder toes hairy.



Fig. 1.—CALLOCEPHALUS VITULINUS (skull).

Callocephalus vitulinus (the Common Seal). *Phoca vitulina*, Linn. Inhabits the coasts of England, Scotland and Ireland, breeding in these localities.

2. PAGOMYS.—Branches of lower jaw diverging; lower edge of lower jaw dilated on the inner side; palate angularly notched behind; angle of lower jaw blunt, sloping behind. Whiskers slightly waved. Web of hind feet hairy.

Pagomys fœtidus (the Marbled Seal), Gray, Cat. Seals and Whales, p. 23. *Phoca fœtida*, Müller. *P. hispida*, O. Fabr. *P. annellata*, Nilsson. *P. discolor*, F. Cuvier, Mém. Mus. xi. p. 189, t. xii. f. 3 (skull). Inhabits Arctic and North Sea, occasionally visiting the shores of Great Britain. England; Nilsson, 1820. Coast of Norfolk; Brightwell, 1846. The seal of the Severn, which Professor Nilsson regarded first as *P. annellata*, and then as *P. grœnlandica*, Mr. Ball thinks, from its small size and the form of the intermaxillary bones, is neither, and that it has yet to be determined. (Ball, Proc. Roy. Irish Academy, 1836, 19, t. 32—35). The specimen and skull in the Norfolk Museum was presented by Mr. J. H. Gurney, who bought it in the Norwich fish-market in 1846. Mr. Brightwell sent the skull to me for examination, and I determined and marked it "*Phoca annellata*, Nilsson" (the marbled seal), and the skull is still labelled "Marbled Seal."

3. *PAGOPHILUS*.—Branches of lower jaw diverging; lower edge of lower jaw dilated on the inner side; palate truncated behind; angle of lower jaw acute behind. Whiskers waved. Web between hind toes nearly bald. Under fur none.

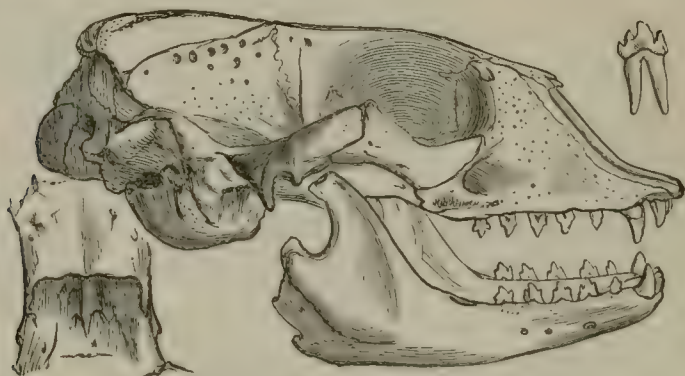


Fig. 2.—*PAGOPHILUS GRÆNLANDICUS* (skull).

Pagophilus grœnlandicus (Harp Seal). Inhabits the North Sea, Shetland, after very bad weather (Saxby, 'Zoologist,' 1864, p. 9099). Dr. Murie (P. Z. S. 1870, p. 604, t. xxxii.) publishes a good figure of this animal. He observes, "When the skin was wet there was nothing to distinguish them from *C. vitulina*. When dry they had a white coat, and instead of minute regular dark spots, they had irregular bands and slashes of a dark hue, intermixed with sparse circular spots, and the elder ones had a broad loin-patch of a deep blackish shade. A half-grown seal, taken at Isleworth! is in the collection of a brewer residing there, and has been referred to this species. Unfortunately the skull and bones were not preserved, so that it is impossible to determine it.

I have never seen a specimen of *Phoca barbata* from the coast of Great Britain, probably the *Halichœrus grypus* was the seal that was taken for it.

Tribe II. *HALICHÆRINA*.—Muzzle broad, rounded; skull higher in front. Nose-hole very large. Grinders conical; the two hinder of the upper and the hinder one of the lower jaw double-rooted.

Halichœrus grypus (Gray Seal). *Phoca grypus*, O. Fabr. *Phoca gryphus*, Lichtenstein. Inhabits North and Baltic Seas. Coast of Northumberland; *T. P. Selby*. Coast of Ireland; *Ball*. Coast of South Wales, Isle of Man, and probably Scilly; *Gray*. North

of Scotland and Hebrides. Living in the Zoological Gardens. Very much larger and darker than the common seal.

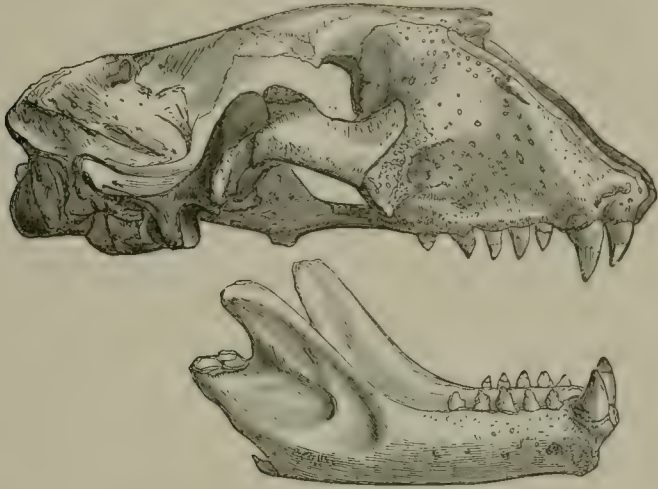


Fig. 3.—HALICHÆRUS GRYPUS (skull).

Section II.—Cutting teeth four above, and four or two below. Muffle hairy.

Tribe III. CYSTOPHORINA.—Cutting teeth $\frac{4}{4}$. Grinders with large swollen roots and a small compressed simple plated crown. Muffle hairy. Nose of male hairy, with a dilatable appendage.

CYSTOPHORINA.—Whiskers flat and waved. Crown of grinders strongly wrinkled. Nose of male with a large compressed hood, extending to the back of the head.

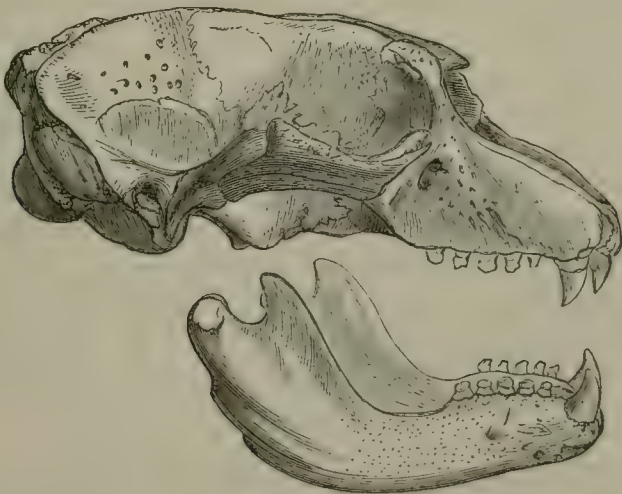


Fig. 4.—CYSTOPHORA CRISTATA (skull).

Cystophora cristata (Hooded Seal). Inhabits North Atlantic. A young specimen has been taken in the River Orwell; at the mouth of the Thames; and at the Island of Oleron, west coast of France, but I greatly doubt if it had not escaped from some ship coming from North America; there is no doubt of the determination of the species. The one caught on the River Orwell, 29th June, 1847, is in the Museum of Ipswich, and was described by Mr. W. B. Clarke, on the 14th August, 1847, in 4to, with a figure of the seal and skull. The one taken on the Isle d'Oleron, is in the Paris Museum, and is figured, with the skull, in Gervais, Zool. and Paléont. Franc. t. 42, and is called *Phoca Isidorei*, by Lesson, in the Rev. Zool. 1843, 256. The young is very like that of *Pagophilus grœnlandicus*, but is immediately known from it by being hairy between the nostrils, and by the grinders being only plated and not lobed on the surface.

J. E. GRAY.

British Museum, November 12, 1872.

British Heronries.—Mr. Harting, in his interesting account of British Heronries, in the October number of the 'Zoologist,' states, under the heading "Yorkshire," that there is a heronry at Hutton Cranswick, near Beverley. I never heard of its existence, but, to make sure of the fact, wrote to a friend who lives near Cranswick, and he replies:—"Mr. Harting is quite wrong in stating that there are now any heronries in the East Riding. There certainly is not one at Hutton Cranswick. There was one at Scorb'ro' some eight or ten years ago, but the birds have been destroyed year by year, and I do not think a single pair are now left. They are very destructive amongst trout, and the Driffield Angling Club give a reward of three shillings for every bird that is shot or trapped, and I am glad to say we are not now troubled much with them. At Boynton (Sir G. Cholmley's) there are yet, I believe, a few herons to be seen." I have not heard of the heronry at Swanland Hall, near Hull. A few herons are occasionally to be seen on Hornsea Mere, but whether they nest there I cannot say, but should think it doubtful.—*William Bethell; Rise, Hull.*

Great Auk.—In a recent number of the 'American Naturalist,' I see mention made of a great auk having been taken on the coast of Labrador in November, 1870, and recently sold to a naturalist in France for two hundred dollars, who is to send it to Austria. I suppose you have heard of this specimen.—*G. F. Morcom, in a letter to Mr. Gatcombe.*

[I shall be greatly obliged to any correspondent who will investigate this, and, if possible, supply any additional information. — *Edward Newman.*]

Peculiarities of Whitefronted Goose.—October 19. I purchased to-day, at a poulterer's shop near Liverpool, a whitefronted goose. The feathers round the base of the bill, usually white, are of a bright orange colour, as dark as the legs. There is also a peculiarity about the middle claw of each foot which is new to me: they are broader than the other claws, which is caused by their being flattened, and their inside edges much sharpened. It is probable that this is a wise provision for the bird for scratching itself and keeping itself free from insects.—*H. Durnford*; 1, *Stanley Road, Waterloo, Liverpool*.

Polish Swan.—November 1. There is a swan in our market to-day whose legs and webs are of a light slate-gray; the knob at the base of the bill is large, and there is no doubt the bird is an old male mute swan. I mention this to show that the legs of *Cygnus Olor* are sometimes of a colour which is said only to belong to the so-called "Polish swan." I have noticed exactly the same thing two or three times before. The bird came from Scotland with other wildfowl.—*Id.*

Scaup Ducks in September.—September 21. I observed to-day a small flock of fifteen or twenty scaup ducks at the mouth of the Mersey. Is not this early for these birds?—*Id.*

Dark Variety of Richardson's Skua.—A Richardson's skua was shot on the Cheshire coast, about the 22nd of September, remarkable for its dark plumage. It is of an uniform dark dusky brown, which causes it from a short distance to look black, with the exception of the lesser wing-coverts, which are dark reddish brown. Beak and legs lead-colour; webs yellowish white at the base; remainder black. It is a bird of the year.—*Id.*

Herrings and Mackerel in Brighton Aquarium.—We have had the same mackerel alive in the tanks for nearly three months, and we have now a shoal of herrings which have been in for over three weeks, and are in splendid condition; and herrings and mackerel have never until now been maintained in tanks. The mackerel and herrings may be seen careering about the tanks, feeding freely. The latter are a very attractive spectacle, their motions are so easy, rapid and graceful: their silvery scales glitter like burnished armour in the sun, and they are very beautiful. Mackerel, herrings, and such wild denizens of the deep, when first put in ordinary tanks, usually go into a panic, and rush to and fro, knocking themselves about against the rock and glass, so as to either kill themselves outright or to so damage themselves that they do not recover; and as to feeding, they do not seem to have any notion of it. This was just the case with the mackerel when we first tried them; they killed themselves in their panics. The Chairman (Mr. Somes) wrote to me and asked what was to be done.

I said, "You must treat them as you would if you desired to tame any other wild creature; keep them in the dark until they get used to confinement, and by degrees let light on them." Mr. Lord carried out my suggestion in an ingenious way: he put the freshly-caught fish in the freshly-drawn thick water, where the fish could not see eighteen inches before them, and added to the obscurity by a thick curtain, allowing no visitors to pester them or frighten them until they were tame enough to bear it. From ten days to a fortnight of this will tame almost any fish, as we find from experience, and I make no doubt but we shall be able to keep alive, and exhibit for any reasonable time, any fish that is found on our coast, provided, of course, it is a fish that we can feed.—*Francis Francis, in the 'Field' of Nov. 9th.*

Additional Notes on Indian Crocodiles.—The following notes (privately authenticated) have been published in a local paper, in reference to my former communication on the subject (Zool. S. S. 2862). They can hardly be said to be parallel cases, but I think they are of interest, as illustrative of the wonderful sight of these brutes:—(1) "In 1863, while fishing in the Nerbudda, not far from Jubbulpore, I saw a mugger (*C. palustris*) swim slowly to the bank, not fifty yards from me, and seize a pariah dog which was sleeping four or five feet above the water's edge. Another instance I saw near Morar, when fishing in the river Koharee with Colonel B., of my regiment. He called my attention to a large mugger which was crossing the pool we were fishing in. It evidently had its eyes on something we did not see, as there was a slight bend in the river just above us. When he was close to the shore he made a rapid rush, and seized a large otter which was basking in the sun about four feet up the bank. Until I saw this I had no idea of the pace a mugger can go at. This took place in 1865. In both these cases I can answer for the tail not being used for the purpose of knocking the animals into the water." (2) "On the 22nd of September I saw a gharial (*G. Gangeticus*) take one out of a flock of cranes, on the banks of the Sutlej, below Pak Puttun. The bird taken was standing with the rest on a spit of sand, and the gharial suddenly darted, seized, and devoured it, amid the cackling of its excited friends. None of the natives with me had ever seen or heard of such a case. I have known of a gharial, in a pool left in the bed of the Gomul stream in Dehra Ismail Khan, which bit cattle that waded into the pool to drink. He was very troublesome in this way till the pool dried sufficiently to admit of his being hunted out and killed. He had probably consumed all the fish in the pool, and was ravenous with hunger."—*A. Anderson.*



